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REPORT ON THE PHYSICAL WELFARE OF MOTHERS AND CHILDREN

VOL. IV.—IRELAND

BY

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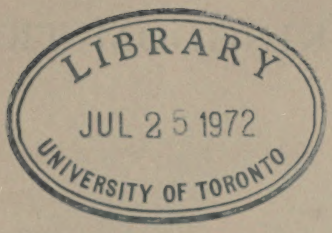

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PREFATORY NOTE

The Carnegie United Kingdom Trustees have taken steps to secure comprehensive Reports on the existing provision for promoting the Physical Welfare of Mothers and Young Children, because the rate of infantile mortality, with its predominant causes, and the health-supervision of children from infancy to the age of admission to school, are—in their opinion—among the most important questions of the present day relating to the well-being of the people.

It is hoped that these Reports may be the means of assisting in the solution of the various difficult problems involved, by setting out the facts in relation to one another, and by placing on record the views of accepted medical authorities on the subject.

The Trustees have decided to publish the Reports forthwith, before they have had the opportunity to decide what steps, if any, might be taken by them in connexion with the subject. The Trustees do not commit themselves to the acceptance of the lines of policy or of the recommendations which have been submitted for their consideration.

The Reports have been compiled by E. W. Hope, Esq., M.D., D.Sc., Medical Officer of Health for Liverpool, and by Miss Janet M. Campbell, M.D., M.S., one of the Senior Medical Officers of the Board of Education, in respect of England and Wales; by W. Leslie Mackenzie, Esq., M.D., LL.D., F.R.C.P.E., F.R.S.E., Medical Member of the Local Government Board for Scotland, so far as Scotland is concerned; and by E. Coey Bigger, Esq., M.D., M.Ch., Medical Commissioner of the Local Govern-

ment Board for Ireland, in respect of Ireland. The volume, to which this is a prefatory note, has been compiled by E. Coey Bigger, Esq., M.D., M.Ch., Medical Commissioner of the Local Government Board for Ireland.

The three countries are in different stages of administrative development in regard to provision for the health of mothers and children; each Report consequently proceeds on the lines suggested by the predominant problems of the particular country with which it is concerned. Though the general treatment is substantially the same, no effort has been made to secure uniformity of exposition.

In publishing these Reports the Trustees desire to express their indebtedness to the Government Departments which have kindly consented to allow their officials to undertake the work of compiling the Reports and to the City of Liverpool for a similar act of courtesy.

The Trustees also wish to thank the several Government Departments concerned, and their representatives, for putting at the disposal of the Reporters statistical information in their possession, and for affording most valuable co-operation and assistance. It is to be understood that the views expressed are the considered individual opinions of those who have prepared the Reports.

To all Municipalities and other Local Authorities, and to the Medical Officers of Health in the United Kingdom, the Trustees also express their sincere thanks for kindly co-operation.

A. L. Haltercington

Secretary, Carnegie United Kingdom Trust.

April, 1917.

PREFACE

I FEEL it my first duty to thank the Trustees of the Carnegie United Kingdom Trust for the honour they have done me in inviting me to write the Report on the most important question of Maternity, Infant and Child Welfare in Ireland. It is a subject which has only of late years come to occupy its present important position, and on which too much light cannot be thrown, for with it is bound up not only the future prosperity of these countries, but even their very existence. The nation owes a debt to the Trustees for their patriotic endeavour to collect and make public the many facts which are involved in this most complex subject, for one cannot doubt that once the public realise what the present condition of affairs is, and compare it with what it might be, they will insist on all the needful work being carried out to its fullest extent, and so hasten the time when every child shall have not only the right to live, but in very truth the power to live.

The collecting of the various facts and figures for this Report, and also its writing, have been a much greater task than I contemplated at its initiation, but it has been a labour of love, and if it has the effect of focussing the searchlight of public opinion on the matter I feel confident that that opinion will see to it that the present state of affairs is altered, and a new *régime*, both saner and worthier of the nation, comes into being. If this comes to pass, and my earnest wish is that it may, I shall feel that my labours have not been in vain, and that I have had a worthy reward.

Many shortcomings the Report possesses, that I know full well, and possibly some inaccuracies, though they have been diligently searched for and excluded as far as possible. My

excuse must be that the time which I had at my disposal for this work has been seriously curtailed by the pressure of many problems arising in consequence of the war, and the urgency of the question has led me to believe that it would be better to give the Report to the public at the earliest moment, even if it were slightly imperfect, rather than wait till all its blemishes were removed by careful and oft-repeated polishing.

It is necessary to explain that when this Report was being prepared, the statistics embodied in it were based on the figures of the Registrar-General for Ireland for the year 1914, which were the latest then available. The Registrar-General's Returns for 1915 were published, however, before the final draft was completed. The more recent figures have now been adopted throughout the statistical portion of the work, save where their substitution would have involved a delay in the publication of the Report.

I must express my deepest thanks to my son, Joseph W. Bigger, B.A., M.B., B.S. (Dublin), of Sheffield University, for the great help he has given me. He has devoted much of his time, both in this country and in England, to the study of Infant Welfare, has compiled many of the tables in the Appendix, and is responsible equally with myself for certain portions of the Report proper. In drawing up the scheme of the Report, he gave me many helpful suggestions, and his criticisms have been of considerable value. His practical work in connection with the Municipal Maternity and Infant Welfare Centre of Sheffield, one of the pioneer centres of England, has assisted me in drawing up the scheme which I suggest should be adopted in the Irish towns.

My best thanks must also be tendered to the four medical women who have written exhaustive memoranda on the subject for this Report. They are the foremost workers on behalf of the infants and children in this country, and know by their practical work the conditions which prevail at present.

Dr. Ella Webb describes the work which is being done in Dublin, Dr. Marion Andrews in Belfast, and Dr. Alice Barry in Cork. Dr. Prudence Gaffikin, who presents a short memorandum, was, I regret to say, unable to deal more fully with the subject owing to taking up military duty in Malta. I feel I must congratulate myself on having persuaded these four ladies to assist me—they all speak from personal experience both as women and as doctors, and their words carry conviction.

I also desire to express my gratitude to the inspectors and the other officials of the Local Government Board for their constant interest and help, and more especially to Mr. J. E. Devlin, Mr. Louis Smith, Mr. F. J. McCarthy, M.A., and Mr. M.A. Lang, for all they have done to make the work easy.

The Registrar-General and the Assistant Registrar-General have rendered valuable assistance in connection with the statistics of the subject, and have given me the use of many valuable unpublished figures and tables. I am also indebted to Mrs. Dickie, LL.D., Insurance Commissioner, for her notes on Maternity Benefit.

My thanks are specially due to the seven hundred and sixty Medical Officers of Health, together with a number of Specialists, and the Clerks of the Unions, who willingly supplied me with much useful information.

I have apologised for the shortcomings of this Report, and I beg of its readers to look not to my poor words but to the great tragedy that lies behind them, the tragedy of infant sickness and death, to concentrate their minds on this, and determine to do all that lies in their power to rectify the wrongs of the helpless.

E. Cecil Hunter

March, 1917.

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MATERNAL AND INFANT WELFARE IN IRELAND

INTRODUCTION

When for more than two and a half years the shadow of War has been dark over Europe, and the pall of death not far distant from every home, when thousands upon thousands have laid down their lives for liberty, for patriotism, or for an ideal, it is not unnatural that those who are left should place a new and higher value on human life. For this paradox has come about that this sacrifice, with its almost wanton disregard of human life, has made life more highly valued, and has turned the minds of many to the ways in which it may be saved. At last it is being realised that patriotism is not geographical, and that those who love their country love not it so much as their countrymen who have made it what it is, and their countrymen who will make it better in the future. This common sorrow and suffering have knit close the bonds which unite us with our fellows, and we turn from the gloom and misery of the far-flung battle grounds of the world to our own land, and to the future, with our hearts fixed on the ideal of making the terrible sacrifice no vain one. No repining, no prayers, no curses can bring back those who have given up their lives for us, but we can save other lives to take their places. Lives there are to be saved, infants' lives and children's lives, saved without risk, with but little cost, and yet some delay and reason why they should be requested to do anything in the matter.

Ireland needs men, and yet of every hundred children born

nine die before they reach the age of twelve months. Is that nothing? Is that a matter for the shrugging of shoulders and a passing-by on the other side? Is it possible to neglect the lives of those children and retain a clear conscience? "Am I my brother's keeper?" was the question of a murderer. Is it to be ours to-day? If not, let us in the name of Heaven, our country and our self-respect, tackle the problem and devise ways and means to cheat Death of the lives of the infants which he now regards as his lawful prey.

If the public can only be made to realise that the newly-born infant has less chance of living till this time next year than his father who is fighting out in France, surely something must be done, but we have a burden of apathy and ignorance to contend with, and these foes are as dangerous as they are insidious. It is not only a simple question of death, however, the matter is more complicated than that, for though nine in every hundred infants born alive die before the end of the first year, many others have suffered from the same diseases as these and have survived. But they are not unharmed, for no disease leaves the patient better or even so well as before; they are damaged temporarily or permanently. There are indeed two rates—the death-rate which we know, and the damage rate which we cannot know. We only know that it does exist, and is probably proportional to the death-rate, rising and falling with the latter. The process is not the weeding out of the unfit as many believe, leaving the stronger and better to survive, but it is a process by which thousands, both weak and strong, are unnecessarily hurried to their graves, and tens of thousands have their constitutions permanently injured, their powers of resistance lowered, and are made weaklings, a burden to their parents, their district, and the State by the sufferings through which they have gone, instead of being, as they should, a strength and support to all.

It is our duty, and should be our privilege to have a double aim—first, to save as many of these lives, which are now recklessly squandered, as possible; and second, to save the other children as far as we can from unnecessary sickness and suffer-

ing and to start them out on life's highway strong and able to resist the many trials and hardships which it is their fate to meet.

Infancy.

To understand the risks that an infant runs we must try to examine its pre-natal conditions, and the stages through which it passes after birth. A baby coming into the world finds itself in very strange and uncongenial surroundings. Before birth it was kept at a constant temperature, and was protected from injuries by its mother's body. It was nourished by certain substances exactly suited to its need, conveyed to it by its mother's blood. Oxygen was brought to it by the same medium. It had to fight no disease-bearing organisms except those which, but rarely, were circulating in its mother's body. So long as the mother was free from serious disease, had sufficient and suitable food, and did not exert herself unduly, the infant continued to live its dependent existence, continued to grow larger and stronger, safe and protected. But from the moment when the mother felt the first symptoms of her confinement the affairs of the infant changed, and when born it found itself cold and choking in a new world. Its last link with its mother's body was broken and it was free—but what a freedom! Now it had to breathe for itself, draw cold, often unclean and vitiated, air into those untried lungs. Food no longer came to its body unconsciously, it had to be sought for, taken into the mouth, swallowed and digested, and digestion is a complicated process. Sometimes the food was not what it should be, and instead of being digested it caused irritation and pain, and so had to be expelled rapidly. The infant's body, unaccustomed to self-defence, had to wage an incessant warfare against disease germs of various kinds, against cold and damp, against injury and against the carelessness and ignorance of those who, although its allies, did not know how to render the required assistance. No wonder the unequal struggle was often abandoned, and the child became one of the thousands who died "under the age of twelve months."

The Position of Ireland with regard to Infant Mortality.

One turning to the question for the first time naturally wishes to have some estimate of its magnitude—how many lives are lost to Ireland each year, and how does Ireland compare with England and Scotland as regards the value placed on infant life? To show in broad outline these matters, it will be necessary to give some figures bearing on them, for although statistics are always dry and frequently misleading, they are occasionally useful and necessary. They will, however, be kept to the Appendix as far as is compatible with the explanation of the rather complex nature of the problem of infant mortality —its existence, its prevalence and its remedy.

In 1915, 95,583 infants were born, and 8,753 under one year of age died in Ireland; that is at the rate of 92 deaths per thousand infants born alive. In England in the same year the rate was 110, and in Scotland 126. Ireland seems to stand in an enviable position, but let us look at the figures of, say, 1904. The rates then were for Ireland, 100; for England, 145; and for Scotland, 123. The fact is that since the beginning of the century, England's rate has been rapidly and steadily declining, while Ireland's rate in the same period, has also declined, but to a less degree than that of England. The reduction in the rate for England has been 24 per cent. Ireland's reduction has been just one-third of this. England realised the alarming proportions of the evil and has been grappling with it; and though it is still far from being conquered much has already been accomplished, and with the attention which has been and is being directed to the subject, together with the agencies that are at work, it is confidently expected that the desired goal will be reached. Ireland, on the other hand, relied too much on her natural advantages, and has done little beyond what her medical and nursing services have effected.

The following table illustrates the decline in the infant and child mortality in Ireland in the past quarter of a century.

It is impossible to believe that this decline has been due to any cyclic variation in climatic conditions, for a period of twenty-five years is sufficient to eliminate that factor. We must attribute the improvement to the causes already mentioned and those which will be described later in the report :—

TABLE A.—INFANT AND CHILD MORTALITY IN IRELAND.

Period	Deaths under 1 year per 1,000 Births	Mortality at ages 1–4 per 1,000 survivors at age of 1 year
1891–1900	104	88.7
1901–1910	96	58.9
1911–1915	91	52.5

It is curious that the infant mortality rate in Ireland remained practically constant from 1864 (when the registration of births and deaths became compulsory, and the Registrar-General's Reports were first issued) till 1890. This may be explained in some measure by the fact that in the early days registration was less strict, and many infants who died shortly after birth were not registered either as births or deaths. The fact that urbanisation, which increases the infant mortality rate, has been steadily increasing has, no doubt, also had an effect. So, though the conditions have improved, the various factors balanced and the rate remained almost constant.

TABLE B.—DEATH-RATES PER THOUSAND LIVING AT VARIOUS AGES.

Age Period	Death Rates	Age Period	Death Rates
Under 1 year	87	35–45 years	9
1–5 years	14	45–55 ,,	14
5–10 ,,	4	55–65 ,,	27
10–15 ,,	3	65–70 ,,	36
15–20 ,,	4	70–75 ,,	49
20–25 ,,	5	75–85 ,,	104
25–35 ,,	7	85 years and over	249

(NOTE.—The numbers alive at the age periods have been taken from the Census of 1911. The death-rates are those of 1914. The death-rate at under 1 year has been calculated per 1,000 births in 1914.)

This table illustrates how terrible is the drain of infant life. A child just born, who should have a long life before him, has about the same chance of surviving his first year as an old man of seventy-seven years of age has of living till his seventy-eighth birthday.

The deaths of infants under one year constitute about one-eighth of the total deaths of the country. Of every thousand children born, almost as many die in the first year as in the succeeding fourteen years.

Although it is possible to save a large proportion of these infants, only comparatively few people take the slightest notice of the proposals for the purpose. Most people either do not know, or do not want to know, the dangers infants run and what might be done to reduce such dangers. We are no longer infants, and most of us wish to forget that we ever were helpless and dependent on others for everything.

The Geographical Distribution of Infant Mortality in Ireland.[1]

The distribution of Infant Mortality in Ireland is not uniform. The thirty-nine counties and county boroughs of the country may be arranged in six groups.

I. Eight counties—Roscommon, Leitrim, Wicklow, Mayo, Tipperary (N. R.), Cavan, Galway and Longford have infant mortality rates below 60 per thousand births. In them 17.1 per cent. of the births of Ireland occur.

II. Six counties—Kerry, King's, Monaghan, Sligo, Donegal and Clare, have infant mortality rates between 60 and 70 per thousand births. In them 13.9 per cent. of the births occur.

III. Six counties—Meath, Wexford, Queen's, Waterford, Cork and Tipperary (S.R.) have infant mortality rates between 70 and 80 per thousand births. They supply 14.3 per cent. of the births.

IV. Ten counties—Kilkenny, Tyrone, Carlow, Londonderry, Fermanagh, Westmeath, Down, Armagh, Limerick, and Louth have infant mortality rates between 80 and 90 per thousand births. Their births constitute 20.8 per cent. of the whole.

V. Two counties have infant mortality rates between 90 and 100 per thousand births, Antrim and Kildare with 5.6 per cent. of the births.

VI. One county and six county boroughs have infant mortality rates exceeding 100 per thousand births, viz.:—

Limerick County Borough	108.16
Waterford County Borough	110.28
Cork County Borough	118.84
Dublin County	121.35
Belfast County Borough	136.73
Londonderry County Borough ...	142.45
Dublin County Borough	160.30

These represent 28.3 per cent. of the births.

[1] This distribution is based on the figures for the year 1915.

Country *versus* Town.

We may also consider Ireland as partly urban and partly rural. This table shows the immense difference between the two :—

TABLE C.—INFANT MORTALITY RATES PER THOUSAND BIRTHS FOR DIFFERENT AGE PERIODS UNDER ONE YEAR (1915).

Area	Under 3 Months	3–6 Months	6–12 Months	Under 1 Year
[1] Twenty-seven Town Districts	72.49	24.20	37.71	134.40
Remainder of Ireland .	43.51	11.48	14.91	69.90
Total of Ireland . .	53.24	15.75	22.58	91.57

[1] The rates given for some of these districts relate to urban combined with a certain amount of rural area.

If we examine the figures we find that in Ireland in 1915 95,583 infants were born, and 8,753 died within twelve months of their births, giving an infant mortality rate of 92 per thousand births.

Of these births 29,923 took place in the twenty-seven principal towns, and of these 4,158 infants died—a rate of 139 per thousand.

In the rest of Ireland there were 65,660 births and 4,595 infant deaths or 70 per thousand births, just over half of the infant death-rate of the towns.

It would be well within the bounds of possibility to reduce the infant death-rate in the towns, so that no town should have a rate exceeding 80 per thousand births. Already some of the towns (even industrial towns) have rates lower than this. Such a reduction would mean a saving of 1,764 infant lives in the year.

In the rest of Ireland the attainment of a rate of 50 per thousand births would be a comparatively simple matter. In several counties at present the rate is below this level. Such a change would represent a gain of 1,312 infant lives.

The Registrar-General for England considers that a rate of below fifty per 1,000 births for the whole of England and Wales is a quite practicable ideal. The infant mortality rate of New Zealand has been gradually reduced from 83 in 1902 to 51 in 1912, largely through the efforts of the "Plunket Society." This Health Society was started by Lord and Lady Plunket when Lord Plunket was Governor of New Zealand, and its operations are mainly directed at reducing the number of infant deaths. There is no reason why a similar reduction should not be possible in this country. But as an intermediate step we might aim at the less drastic reduction (of the towns to 80 and of the country to 50), saving 3,076 infant lives in Ireland each year.

The table given above, which contrasts the infant mortality of the Town Districts with that of the rest of Ireland, for the age periods 0-3 months, 3-6 months, and 6-12 months is most useful. In the first period the rate for the Town Districts is 67 per cent. more than that of the remainder of Ireland. If we had the figures for the first week, we should probably find closer approximation. In the next period 3-6 months, the rate for the Town Districts is one hundred and eleven per cent. more than that of the remainder of Ireland; and for ages 6-12 months it is one hundred and fifty-three per cent. more than the remainder of Ireland. The explanation is that, with increasing age, the child becomes more of a separate entity, less closely bound to its mother. In the town the infant is more exposed to infections and to all the dangers and evils of dirt and disease incidental to town life. In the country the infant is brought less closely into contact with other children, gets fresh air, and is more generally breast-fed.

Until the year 1915, no return of the number of deaths of infants under one month old was published, but the Registrar-General has kindly supplied me with the following figures for the Dublin Registration Area.

TABLE D.—INFANT MORTALITY RATES PER THOUSAND BIRTHS FOR AGES UNDER ONE MONTH AND UNDER ONE YEAR. (DUBLIN REGISTRATION AREA.)

Year	Deaths under 1 month per 1,000 Births	Deaths under 1 year per 1,000 Births
1913	53	153
1914	48	145
1915	50	163

These figures show that almost exactly one-third of the total deaths in the first year in the Dublin Registration Area occur at less than one month old. In order to show the appalling loss during the first month of infant life in Dublin it might be pointed out that a larger number of infants die before reaching one month old out of every 1,000 infants born in Dublin, than die during the first twelve months out of every 1,000 infants born in some of the poorest counties in Ireland. So, for Dublin at all events, we must devote most of our attention to the period immediately succeeding birth. It will probably be even necessary, if it is possible, to commence our attention before the birth of the infant.

A SURVEY OF THE CAUSES OF DEATH AMONG INFANTS IN IRELAND.

(*The reader is referred to the Appendix, Table V., page* 167.)

Common Infective Diseases.

The common infective diseases of childhood—measles, scarlet fever, whooping-cough, diphtheria, influenza, and chicken-pox, were responsible for the deaths of 6.52 infants per thousand born in 1915, or 7.1 per cent. of the total infant deaths; the figure for 1914 was 6.15 per 1,000 births.

Of course the incidence and mortality from these diseases

vary considerably in different localities and in different periods, and while one or two of these diseases cause a large mortality in some localities they may be absent from other localities during the same period, but taking the whole of Ireland it will be seen that the mortality from the common infective diseases is fairly constant. We will therefore deal with their mortality and geographical distribution in 1915.

When we consider the distribution of this mortality geographically we find that in four counties or county boroughs—Waterford County Borough, Tipperary (North Riding), Queen's and Wexford—the mortality is nil. In eighteen it is under 5 per thousand births, and in 14 it is between 5 and 10. In only three does it rise above 10 per thousand births, viz.—in Belfast County Borough (10.24), in Londonderry County Borough (36.09), and in Londonderry County (15.79).

An analysis of the separate causes of death shows that whooping-cough is by far the most fatal, carrying off 3.73 per thousand. In other words whooping-cough is the cause of death of more infants than all the other infective diseases put together. In the two County Boroughs and the County in which the infective disease mortality is over 10 per thousand births, we find that the whooping-cough mortality is for Belfast County Borough 6.23 per thousand births, for Londonderry County 10.18, and for Londonderry County Borough 32.29 per thousand births. So the very abnormal death-rate from infectious diseases in Londonderry County Borough was due almost entirely to whooping-cough. The high mortality rate of this disease is probably in 90 per cent. of the cases due to the dangerous complications—bronchitis and pneumonia—which are, if proper care is taken, very largely preventable. Unfortunately most mothers look upon whooping-cough as a very minor matter, and the treatment which the child receives is practically none. Its infectious nature is not sufficiently realised by the public, but an epidemic such as that in Londonderry in 1915 can leave no doubt on the matter. Prompt medical treatment would save a great many of the lives at present sacrificed to this disease.

The next most fatal is measles with a rate of 1.23 per thousand births, as compared with 1.8 in 1914. With it the second half of the first year is five times as fatal as the first half. The mortality from both scarlet fever and diphtheria is likewise much greater in the second six months than in the first. The explanation is fairly obvious. In the first six months the child is not taken out much and is not mixing with others outside the domestic circle. Later on it is left in close proximity to other infants and children, and the chances of infection are greatly increased. Besides this, increasing age means decreasing breast feeding, and it is well known that cow's milk is a fruitful means of conveying the infection of these diseases. The mother looks upon these three diseases as serious and a doctor is consulted early. It is probably due to this fact that the mortality from them is much less than that from whooping-cough. Influenza is responsible for 0.80 deaths per thousand births.

What is necessary for the lessening of the mortality from these common infective diseases, is earlier diagnosis and treatment. The mother must learn that any departure from the normal in her child may be a serious matter and a doctor should be consulted. Early isolation of the affected child will not only improve his chance of life but will also lessen the risk of infection both in the family and in the district.

Diarrhœal Diseases and Gastritis.

These diseases caused the deaths of 12.39 infants per thousand born in 1915—4.86 in the first three months, 3.76 in the second three months, and 3.77 in the next six months.

On examining the geographical distribution of these diseases we find that of the counties and county boroughs in Ireland, 14 have mortality rates below 5 per thousand births, which is very satisfactory. The lowest are Leitrim, 1.66; Mayo, 2.08; Longford, 2.14; Monaghan, 2.22; Meath, 2.22; Roscommon, 2.25. In fourteen counties the rate is between 5 and 10. In four the rate is from 10 to 15, and in seven over 15—namely, in Tip-

perary (South Riding), 17.52; Belfast County Borough, 19.59; Dublin County, 19.94; Cork County Borough, 20.87; Waterford County Borough, 25.33; Londonderry County Borough, 29.44; Dublin County Borough, 37.58; while the 27 Town Districts have a rate of 24.11. These figures show quite clearly and unmistakably that diarrhœa and enteritis are usual if not necessary results of increased urbanisation. The counties with the lowest rates are amongst the most sparsely populated in the country with no large towns, while five of the six county boroughs occur in the last group. The place of Dublin County in this group is easy to understand, for it includes such densely populated districts as Rathmines, Pembroke, Kingstown, &c., but the position of South Tipperary is difficult to explain for it contains no considerable towns.

The chief causes of the prevalence of diarrhœa and gastritis are ignorance, carelessness, dirt and improper food. It is a well-known fact that babies who are entirely breast-fed very seldom suffer from these complaints. The use of the bottle introduces many new dangers—the lack of cleanliness of the bottle, the nature of the food, and the degree of its contamination. One other factor is at work; it seems a small thing to bother about, but it is nevertheless of great importance—it is the dummy teat or "comforter." This abomination, which is so common and in which mothers have such faith, is a fruitful cause of gastro-intestinal disorders. On the floor, then in the infant's mouth, it is generally a rich culture-bed of various pathogenic and other organisms. One may teach the mother the right kind of bottle, the proper food, how to prepare it correctly, and the necessity for cleanliness, but the dummy teat is the last relic of unhygienic babylore to be abandoned.

Tuberculous Diseases.

These caused the death of 2.01 infants per thousand born; their incidence increases with the age of the child, going to prove what is now fairly generally accepted, that they are

acquired and not congenital. The mortality rates for these diseases show a most remarkable decline within the last few years. This may be due to some extent to the spread of information concerning tuberculosis throughout the country, to more efficient treatment, and also to a purer and less infected milk supply. In this connection it is to be noted that non-pulmonary tuberculous disease is more fatal to infants than pulmonary. But changes in certification are possibilities not to be ignored. The differential diagnosis between broncho-pneumonia and pulmonary tuberculosis in a child under one year is an exceedingly difficult matter. The largest rates are in Dublin and Cork County Boroughs, and in King's County.

It is a matter of great interest that generally and roughly the counties with the lowest infant mortality rates are also those with the lowest tuberculosis death-rates. No doubt the causes which decrease the infant mortality rate go to decrease the tuberculosis rate and vice versa. This is an instance of what has already been stated that a reduction in the infant death-rate means an improvement in the general health conditions. It would be most desirable fully to investigate the connection between these two conditions so as to find out their full import.

Premature Birth.

8.29 per thousand born is the rate of infant deaths due to this cause. Its fatal effects are almost always in the first three months, chiefly in the first week.

For the provinces of Ireland the rates are in order of magnitude (average of the rates for the years 1914 and 1915) :—

Leinster	10.9	per thousand births.
Ulster	10.2	„ „ „
Munster	5.2	„ „ „
Connaught	2.0	„ „ „

The chief causes are generally stated to be:—syphilis, heavy working or straining of the mother during the later part

of pregnancy; and the excessive use of alcohol (and possibly some unsuitable foods and condiments) during pregnancy.

It is impossible to state definitely in which province there is most intemperance among pregnant women, but it is probably either in Leinster or Ulster.

There is no doubt that a great many more women are employed in extra-domestic industries, especially in factories, in Ulster than in any other province. But it must be remembered that the lifting of a heavy wash-tub, the continual working of a mangle, or stretching to put clothes on a line is more likely to cause premature labour in a woman who is eight or nine months pregnant than is the watching of a spinning machine or some such work which does not involve great straining.

Syphilis, as a causal factor, is something more tangible. Although the general mortality figures from this disease are always, for obvious reasons, to be considered an under-estimate, yet they are probably relatively fairly correct and give an idea of the prevalence of the disease in Ireland. Their values for the four provinces were according to the average of the rates for the years 1914 and 1915 :—

Leinster	...	...	2.1	per thousand	deaths.
Ulster	...	...	1.4	„	„ „
Munster	...	...	.38	„	„ „
Connaught	...	...	.12	„	„ „

It is to be noticed that the provinces occur in the same order as in the list giving the deaths due to premature birth, and that the relationship between the figures is very roughly similar.

One may conclude from the foregoing and general considerations that while there are several factors at work in causing premature births, the chief is syphilis. In England and Wales the prematurity death-rate in 1914 was 19.9 as compared with 8.03 for Ireland, and one county in England has a rate as high as 35. This is exactly what we would expect from what we know of the causes of premature birth.

Congenital Malformations.

These represent 2.20 deaths per thousand births. Again, the incidence is chiefly in the first three months.

The causes of these diseases are not yet understood, but it is probable that the same factors as those which cause prematurity, with others are at work. The rates for the provinces are related in the same way as are those for prematurity.

While some infants born with a congenital malformation may live, and prompt surgical treatment may save the lives of others, most of them are hopeless. The study of their causes seems to present a promising field for scientific investigation, but at the present stage of our knowledge it would be both foolish and useless to attempt to dogmatise. Since the causation of prematurity and of congenital malformation is probably very similar, the two may be considered together. Examining the distribution of these two causes of death we find that in some counties the mortality rate is very low (1.64 in Fermanagh and 1.70 in Wicklow), while in Dublin County Borough it is 22.82, in Waterford County Borough 20.86, and in Belfast 19.39. Evidently town life increases the conditions very markedly, but we have no data to help us in deciding what are the chief factors concerned.

Want of Breast Milk.

This is given as causing .12 deaths per thousand births. This is a very small number—only 13 deaths in all—but why this should be given as a cause of death it is impossible to say. We know that breast milk is the natural and best food for an infant, but its absence is not an adequate and sufficient cause of death. I would suggest that improper feeding, though not a disease, would be a more appropriate heading than "Want of breast milk."

Atrophy, Debility, Marasmus.

These cause 23.96 deaths per thousand births, of which 19.84 occur in the first three months of infant life. They are a heterogeneous collection of names which signify little.

Marasmus given as a cause of death is equivalent to saying that the child did not thrive and the certifying doctor was unable to account for this.

In all probability a more stringent examination of the circumstances surrounding the deaths of these infants would have revealed the fact that the real causes were—improper feeding, leading to starvation or enteritis; syphilis, tuberculosis, and prematurity. Local variations in the rate of mortality due to these causes are not commonly so large as in other diseases. The county area with the lowest rate is Limerick County Borough with 9.54 per thousand births; the highest, Waterford County with 37.04.

Syphilis.

Is alleged to cause .64 infant deaths per thousand births, and although this is most likely only a part of the whole, it may be taken that syphilis is not directly a considerable cause of infant deaths. A more detailed survey of the prevalence of syphilis in Ireland has been given in consideration of prematurity. 27 of the 39 counties and county boroughs have no infantile deaths attributed to syphilis. In Dublin County Borough the rate is 2.35, and in Dublin County 2.06; in Belfast it is 1.85.

Pneumonia and Bronchitis.

Pneumonia is credited with the deaths of 7.45, and bronchitis with the deaths of 9.19 infants per thousand births. These are largely preventable diseases in infants at all events, and proper care to protect the child from the cold, while at the same time giving him plenty of fresh air, would almost banish them from the list of fatal diseases. An infant, underfed maybe, who is habitually kept in a stuffy and ill-ventilated room and is then taken out, insufficiently clothed, by the mother when she goes to do her shopping on a cold and wet day, is placed in the most favourable circumstances for the contraction of pneumonia or bronchitis. Such a practice is all too common in the larger towns.

Damp houses are another important factor, and the scarcity

and dearness of fuel in some parts of Ireland has probably an influence on the number of deaths from these diseases.

The Medical Superintendent Officer of Health of Belfast states that the high proportion of infant deaths in that city, 32.53 per thousand, the highest in Ireland from bronchitis and pneumonia, is partly, at all events, due to the common practice of the mothers carrying their babies, insufficiently clothed, in the early hours of the morning from their homes to the houses of "minders," who look after or undertake to look after the infants while the mothers are at work.

Dublin and Londonderry County Boroughs have also high rates (27.63 and 25.65 respectively).

Convulsions.

10.61 infants per thousand births are recorded as dying of this symptom. A child may die in a state of convulsion, but no child dies of convulsions. The condition is a common terminal in many diseases of infants, but is most usually associated with gastro-intestinal disorders or one of the wasting diseases. The greater number of deaths ascribed to convulsions should be transferred to one or other of these groups.

The rate for Limerick County Borough is the highest (38.18), which is significant when taken in conjunction with its atrophy, debility and marasmus rate of 9.54.

The contrast of the following figures is remarkable :—

—	Limerick County Borough	Limerick County
Atrophy, debility, marasmus	9.54 (Lowest in Ireland)	35.24 (Second highest in Ireland)
Convulsions	38.18 (Highest in Ireland)	6.63 (A low rate for Ireland)

It is quite evident that there is a laxity about the use of these terms, and the only conclusion is that they are used more or less synonymously. Atrophy, debility and marasmus may not be very satisfactory diagnoses, but they are certainly preferable to convulsions.

The Age at Death of Infants.

For the year 1915 the Registrar-General has given a table showing in detail the causes of deaths of infants in the twenty-seven town districts at various age periods (see Appendix, Table VIII., page 182).

The total infant mortality for these districts is 134.40 per thousand births, which is made up as follows:—

I. Common Infective Diseases ...	9.06
II. Diarrhœal Diseases	24.11
III. Wasting Diseases	43.37
IV. Tuberculous Diseases	3.71
V. Other causes	54.15

For the Infective Diseases we find that .22 is the rate under one month, there being no deaths under the age of two weeks. The rate increases fairly steadily each month, having a maximum of 1.33 in the tenth month. Of these diseases, whooping-cough is by far the most fatal, accounting for 6.08, and measles for 2.33 of the 9.06 deaths. The preponderance of whooping-cough is noticeable in each of the months except in the ninth and tenth, when the measles mortality rate is greater.

The Diarrhœal Diseases mortality gradually increases to the third month, in which it has its maximum of 3.59. From that it falls to the twelfth month, when the rate is 0.66.

Wasting Diseases have their heaviest incidence in the first month (29.63 out of 43.37 in the year), and of this the first day accounts for 10.07, and the next week for 8.88. All this mortality may be said to be due to ante-natal causes.

Tuberculous Diseases do not appear till the third week, and in the first month only have a mortality rate of 0.06. From the third month onwards their rate is fairly constant.

Convulsions is the cause assigned to 14.30 deaths per thousand births in the first year. 4.95 is the figure for the first month (the highest).

It is to be regretted that these tables lose much of their value owing to the lack of a corresponding table for the rest of

Ireland—the rural and smaller urban districts. The high mortality rates from diarrhœal diseases, wasting diseases, convulsions, bronchitis and pneumonia which are shown can all be greatly diminished by individual care, together with greater attention to sanitary measures and the removal of insanitary conditions, by the sanitary authorities.

Certification of Deaths in Ireland.

The foregoing are the most important causes of infant mortality in Ireland, but, as I have observed before, too much reliance is not to be placed upon them. Certification of death in Ireland is not so advanced as in England; many more persons die in this country without having been attended by a doctor in their last illness than in England. This is shown by the number of uncertified deaths :—

Leinster	...	...	...	15.9 per cent.
Ulster	...	...	...	17.8 ,,
Munster	...	...	...	25.4 ,,
Connaught	...	...	...	50.0 ,,

The figure for England and Wales (1914) was 1.2 per cent., and for Scotland (1913) 1.9 per cent.

Up to the present no returns relating to the number of still births are available.

The Notification of Births (Extension) Act of 1915, by the provisions of which the notification of birth of every child which had issued from its mother after the expiration of the twenty-eighth week of pregnancy, whether alive or dead, was made compulsory in all urban districts, only came into force on the 1st of September, 1915. Before that date the Act of 1907 had only been adopted in the County Boroughs of Dublin and Belfast.

Dr. Routh has estimated that the total ante-natal mortality in England is 150 per thousand live births, and also that one-half of the still births are due to syphilis. Since this disease is very much rarer in Ireland than in England, one would expect that abortions and still births would also be rarer in this country, and though we have no figures to prove it, the replies

received from the Medical Officers of Health point to the truth of this.

Out of the 756 Medical Officers of Health in the urban and rural districts who reply to the query: "Which do you consider the most fatal infantile disease in your district?"

292 stated Bronchitis and Pneumonia.
180 Diarrhœa and Enteritis.
108 Prematurity and Congenital Defects.
87 Convulsions.
79 Measles and Whooping-cough.
60 Atrophy and Marasmus.

In some cases two or more of these groups of diseases were stated by medical officers to be equally fatal, and in calculating the number of replies under each heading these were reckoned separately. (See Appendix, Table XVI., page 204.)

Deaths of Children 1–5 Years.

(In the Appendix will be seen a table showing relative mortality rates for the Provinces and Counties of Ireland for the age periods—under one year, 1-2 years, 2-3 years, 3-4 years, 4-5 years (Ireland = 100).) See Table XII., page 193.)

In Ireland in 1914 and 1915 there were respectively 8,622 and 8,753 deaths of infants under one year of age. In the same two years, 4,784 and 4,724 deaths between the ages of one and five years occurred—that is, almost twice as many children died within one year of birth as within the next four years. The causes of the deaths of these children between one and five, approximate more to the adult causes. (See Appendix, Table XI., page 192.)

The most remarkable fact revealed by Table XI. is the heavy incidence of the common infective diseases. They are responsible for nearly one-third of the deaths of children at this age—the percentage being more than four times that of infants from these causes. Measles is by far the most important cause.

Tuberculosis is another very important cause of children's deaths. The proportion of their deaths due to tuberculosis in one form or other is about four times that of the infants.

Bronchitis and pneumonia together are responsible for almost one-quarter of the deaths of children. It is important to remember this fact in connection with the high phthisis death-rate in later life in the country.

One is struck by the very great decline in the number of deaths due to gastro-intestinal diseases and convulsions, showing once again that increased age brings with it increased resistance to irritants, whether bacterial, toxic or of some other nature, in the gastro-intestinal tract.

It is unnecessary to survey these causes of death in greater detail, as what has been said of them in the case of infants is equally applicable in the case of children between the ages of one and five years.

Small outbreaks of acute anterior poliomyelitis and a number of sporadic cases of this disease have occurred during the past few years in this country, and have proved fatal to many children, while others have been permanently crippled. Removal to hospital of the cases and isolation of the contacts, together with disinfection of the premises where the cases occurred, is the usual procedure adopted, but it sometimes happens that cases are so mild that they are not recognised until paralysis supervenes.

Notification of Infectious Disease.

Poliomyelitis is one of the diseases that sanitary authorities can add to the list of notifiable diseases under the Infectious Disease (Notification) Act, 1889, but many sanitary authorities refuse to adopt this important Act. When Parliament, with all the necessary information before them, made notification of infectious disease compulsory in England and Scotland, it is difficult to see on what grounds they left the Act an adoptive one in Ireland. How can it be expected that the ordinary representatives on the urban and rural district councils in this country can be in a better position to judge whether cases of infectious disease should be notified than Parliament, with the best expert opinions at their command?

The same applies to the Notification of Tuberculosis, and to the Notification of Births Act in the rural districts.

There appears to be no more reason why Parliament should cast the responsibility for the notification of infectious disease and tuberculosis on the small local sanitary authorities than there would be for these in turn to cast the responsibility on each individual householder. Infectious disease frequently spreads from a district where the Act is not in force to a district where it is in force, without the sanitary authority of the latter having any knowledge of the existence of the disease, or being in a position to take precautionary measures to prevent it spreading to their district. This is most unfair to the district in which the Act has been adopted, and in many cases causes the latter to be practically worthless.

It is impossible to stamp out, or reduce the incidence of, infectious disease unless the sanitary authorities have the earliest notice of when and where cases occur.

I would strongly recommend that the notification of infectious disease and of tuberculosis should be made compulsory in every district, and that the Notification of Births Act should be extended to the rural districts.

Deaths of Women directly attributable to, or associated with, Pregnancy or Childbirth.

In 1915, 576 women died in Ireland whose deaths were either caused by, or associated with, pregnancy or childbirth.

203 women died from puerperal septic diseases, a rate of 2.12 per thousand births. The average number for the preceding ten years was 203, a rate of 2.00 per thousand births.

The provincial rates from this cause are:—

Leinster	...	1.8	per thousand	births.
Munster	...	2.1	„	„ „
Ulster	...	2.4	„	„ „
Connaught	...	1.9	„	„ „

That is, 35 per cent. of the total mortality associated with child-bearing is caused by infections. Anti-sepsis and asepsis

have shorn general operative surgery of the terror of sepsis, and a surgeon regards the appearance of sepsis in a clean case as a disgrace to himself and his methods. And yet 2.12 women die from sepsis following labour for every one thousand births. This rate is an index of the lack of skilled and trained attendance at birth. Even amidst the worst domestic conditions there is no excuse for septic disease to follow, if proper precautions are taken. It is unfortunate that the "handy woman," an incompetent person who has no knowledge of midwifery and is frequently dirty, is still allowed to practice her nefarious trade unchecked, and to carry the germs of child-bed fever from one victim to the next.

The number of deaths from accidents of pregnancy and child-birth (apart from sepsis) was 312, a rate of 3.27 per thousand births. The rates for the provinces were :—

Leinster	...	3.0	per thousand	births.
Munster	...	3.2	„	„ „
Ulster	...	3.2	„	„ „
Connaught	...	3.7	„	„ „

The conclusion that deaths from these causes are to be attributed chiefly to lack of skilled medical and midwife help is confirmed by the fact that during the period 1911-14, the death-rate from puerperal sepsis and accidents of child-birth per thousand births was :—

4.5 for the Civic Unions.
5.7 for the Rural Unions.

These rates compare unfavourably with the English rate, which was under 4 per thousand births.

The prevalent high rates from complications of pregnancy would lead us to expect a corresponding high death-rate in the first week of the infant's life. This has been the experience in England : " A low rate of infant deaths in the first week is commonly associated with a low maternal mortality." (Newsholme.)

In addition, 61 women (0.64 per thousand births) died from causes (such as heart disease, tuberculosis, &c.), associated with pregnancy or child-birth.

That is, the mortality caused by or associated with pregnancy or child-birth for Ireland is 6.03 per thousand births.

The figures of the Rotunda Hospital, Dublin, form an interesting contrast—2,250 maternity patients were admitted and 2,024 attended in their homes in one year. Of all these 10 died—or at the rate of 2.3 per thousand births, while the maternal mortality rate for Dublin County Borough was 4.5 per thousand, or almost double the Rotunda figure. When it is recollected that the Rotunda cases (intern at all events) are picked—the worst picked, many being primi-paræ, some of whom have deformed or rickety pelves, others sent in by doctors suffering from severe eclampsia or hyperemesis, or admitted during labour for immediate operation on account of some obstruction, the change effected by proper skilled assistance is at once self-evident.

The remedy for the high maternal death-rate is to prevent the attendance by unskilled women throughout the country, and to facilitate institutional treatment where such is necessary, in difficult and complicated cases.

If we examine the more detailed figures for Ireland, we find that 32 deaths were due to "accidents of pregnancy." This is so vague that it is impossible to say how many, if any, of these lives, might have been saved. But 116 were due to puerperal hæmorrhage, and it is hard to believe that all these deaths were incapable of being prevented.

Other "accidents of child-birth" account for 98 deaths. Again, the terminology is unsatisfactory and vague. A visit to the doctor some time before labour would surely have revealed the causes of some at least of these which might have been prevented.

Puerperal septic disease—a class which should and could be eliminated—I have noticed before.

Puerperal albuminuria and puerperal convulsions, together account for 59. By repeated and systematic examination of the mother during her pregnancy, these conditions might have been diagnosed and treated earlier with satisfactory results. Eclampsia is essentially a preventable condition.

I have not been able to obtain any evidence of the use of lead salts or other drugs for the purpose of procuring abortion in Ireland, such as is fairly common in some English manufacturing towns. The practice may exist to a small extent in the cities, but must be rare.

Nor has any information been obtained of the performing of illegal operations for the same purpose by midwives, quacks, or qualified medical men.

Factors in the Causation of Deaths of Infants and Children.

Now most of these diseases amongst infants and children and many of the fatal complications of pregnancy and child-bearing may be traced to more remote causes, or at least remote causes which increase both the sickness and death rates may be found. It is to these that we must direct our investigations, for by dealing with them we may hope to lessen the infantile and maternal mortality of the country. There are no specifics for gastritis or pneumonia or infectious disease or marasmus, but if we can find the big factors which lie behind them, which cause them to be so serious as they are, we may grapple with the evils, and so indirectly but certainly we may lessen the incidence and mortality of these diseases. For it is infinitely better to prevent than to cure.

Our inquiry must be widespread and all-embracing. The past life of the mother and father; their education, employment, wages, food and surroundings; their doctors and nurses, all these and many other subjects must be investigated.

It appears that the following ten factors are those chiefly involved in the causation of infant and child deaths:

1. The care of the mother before, during and after labour and the advice given as to the care of the child.
2. The economic conditions of the family.
3. The domestic surroundings of the infant and child.
4. The extra-domestic surroundings of the home.
5. The health and habits of mother and father.

6. The affection of mother for child; her education and fitness for motherhood.
7. Legitimacy or illegitimacy of offspring.
8. The size of the family.
9. The ages of mother and father at marriage.
10. The supervision of milk and food supplies.

An attempt has been made to place these factors in the order of their importance, but this is difficult, and many people will disagree as to which is the most important. The various factors are not independent, but are closely inter-related. For instance, domestic surroundings will depend to a considerable extent on the economic conditions of the family, as will also the health and habits of the mother and father, and the care bestowed on the mother. Again, poverty (in towns) nearly always involves bad housing and insanitary conditions. But bad housing and insanitary conditions, with a lack of skill in mothercraft, will cause a high infantile death-rate even where there is no poverty.

Let us now proceed to a more detailed consideration of each of these ten factors in turn as they are found in Ireland.

1. THE CARE OF THE MOTHER BEFORE, DURING AND AFTER LABOUR, AND ADVICE GIVEN AS TO THE CARE OF THE CHILD.

The Medical Charities Act of 1851, under which the present dispensary system was established, conferred the right to free medical advice and medicines upon the sick poor throughout the country.

The Poor Relief (Ireland) Act of 1862 authorised the relief in workhouse hospitals of all " poor persons " requiring medical or surgical aid, and provided that such persons might be called on to repay the whole or a proportion of the cost of their treatment and maintenance, if they were in a position to do so.

These Acts, therefore, confer the right to free medical advice and medicine on all poor persons, and treatment, free or at small cost, in an institution when necessary. They also secure for every " poor " woman the right to the services of a midwife or

doctor, or both if necessary, at her confinement, without payment.

So no woman, infant or child in Ireland need be without the services of a doctor when such are required.

Ireland is divided into 740 dispensary districts, having 1,226 dispensaries or dispensary stations. These districts are attended by 810 medical officers and 751 trained midwives. There are about fifty districts without midwives. In them, it is the duty of the medical officer to attend to the confinement himself or to requisition the relieving officer to provide a midwife, which he has power to do.

The Act of Parliament does not define a " poor person," but in practice he or she is one who is unable to afford the fees charged by the medical men of the district. The customary high fees charged by medical men in Ireland have thrown many upon the dispensary medical relief who would willingly have paid smaller fees.

The services of the doctor or midwife, as the case requires, are obtained by the presentation of a medical relief ticket, which has previously been obtained from a guardian, a warden, or a relieving officer. The tickets are of three kinds—one requires the medical officer to attend at the patient's home, the second enables the patient to obtain medicine and attendance at the dispensary, the third empowers the patient to call in the midwife in the first instance.

The medical officer and the midwife are appointed and paid by the guardians, but one-half of the salaries of the medical officers is subsequently recouped out of a Government Grant (the Local Taxation Account), as also one-half of the cost of the medicine and medical and surgical appliances. Neither the medical officer nor the midwife is a whole-time officer.

It is praiseworthy but unfortunate that many women who cannot afford to pay the fee of a doctor to attend them during confinement are too proud to avail themselves of the services of the dispensary doctor or midwife, and so call in what are known as " handy women," whose fees are very small, to attend them. These women are untrained, and know nothing of the dangers

of septic poisoning, or of the advantages of antiseptics. Belfast obtained power by a local Act to keep a register of midwives and to strike off the register persons found guilty of negligence or want of skill, and also power to prevent unregistered persons attending women in their confinements.

There is no Midwives Act in Ireland or Central Midwives Board. It is regrettable that although the desirability of having such a Bill passed has been frequently urged by the medical profession, this has not yet been done. Scotland has succeeded in getting a Midwives Act passed in spite of the difficulties of legislation in war time, and there is no reason why Ireland should any longer be denied this benefit, for it is very much needed.

2. THE ECONOMIC CONDITIONS OF THE FAMILY.

The greater part of the people of Ireland are engaged in agriculture, and, as the average weekly wage of an agricultural labourer was about 11s. to 15s. before the war, it is easy to understand that the majority are habitually under-fed, and many of the children actually on the verge of starvation. In the country parts there are no small industries to supplement their income. If they rely on the land for their sustenance, they must rely on it alone. The wife may go out, as well as the husband, to work in the fields, and may thus bring in a few more shillings to the family exchequer; but, apart from the frequent contributions of friends in America, which often mean so much to Connaught families, that is all. The wife, enfeebled by her insufficient diet and by hard work, is not very fit for the additional strain of pregnancy. So long, however, as she is able to rest for a few weeks before her confinement, the work she does seems to have little ill-effect on her, very different from the condition of the woman factory worker. An ill-nourished mother may, at the expense of her own resources, bring forth a well-nourished baby, but she will not generally be able to supply it with a sufficient quantity or quality of breast milk. It has been shown fairly clearly that the nourishment of the mother during pregnancy has a definite effect on her capacity to suckle her infant.

The mother, in consequence of the straitened circumstances of the family, has not the money necessary to provide herself with the outfit for her confinement, and her child with proper garments.

In the majority of cases she suckles her child herself, but her food being scanty, and the drain on her system having been severe, the milk is not always forthcoming, and she is frequently compelled to abandon the breast in favour of the bottle, a change fraught with the most dangerous consequences for the infant.

When the child is weaned—whether it be at the proper time or earlier in consequence of the mother's poor condition—the difficulties of infant foods arise. Milk is expensive, dried milk prohibitive, and so recourse is often made to skim-milk, an unsatisfactory diet for an infant, and one which is not improved by the addition of potatoes and other scraps from the parents' scanty table.

So we see that the economic factor is an important one in the case of the infants of agricultural labourers.

(*a*) It often compels the mother to work almost to the day of her confinement.
(*b*) She is badly fed.
(*c*) She cannot provide the necessary outfit.
(*d*) Being ill-nourished, she cannot continue to suckle her child.
(*e*) She cannot provide proper food or clothing for the child.

The returns received from medical officers show that in 102 of the 600 rural dispensary districts in Ireland, poverty is an important link in the chain of causes of infantile deaths. (See Appendix, Table XVII., page 205.) There is no doubt that, before the war, poverty was much more general throughout the country than it is at present.

In the districts in which there are villages and small towns the financial aspect of the question is somewhat altered by the fact that the land is not the only source of employment. There are various small industries—the treatment and spinning

of flax, linen and cloth weaving, creameries, bacon industries, furniture making, hosiery, lace making, fishing along the coast, and many others. These all help to increase the rate of wages, both by offering part-time employment and also indirectly by raising the standard of payment. But even with them the weekly wage of the agricultural labourer who is not skilled in any other trade is still miserably small and insufficient to provide enough suitable food for the family.

The class immediately above that of the labourer—the small farmers, of whom there are so many—must also receive attention. The various Land Purchase Acts have transformed them, or rather are in process of transforming them, from tenants to proprietors. In most cases the transition is not yet complete, and they are still paying the purchase-money, which is less than the former rent, so every year sees them more and more independent and in a better financial position. They are no longer haunted by the bogey of having their rent raised, and they are able to devote more money to the purchase of food and other necessities for their infants' welfare.

For the past twenty years the available income of both labourers and farmers has risen, but the cost of food has, at the same time, risen and its nature has changed. Milk, porridge, and potatoes were once the staple food of the labouring and farming class; now it is bread, tea and potatoes—a change very much for the worse, and one which is bound to react on the infant by making the mother less fit to bear her child, and to suckle it when born.

In the cities and towns of Ireland, the condition of affairs is different. In them there are various manufactories, but it must be recollected that there is practically no coal in Ireland; almost all that is used must be imported, and this is a very great handicap to the industries of the country. Nevertheless, there are some very important works and factories which employ large numbers of men and women, both skilled and unskilled. The former receive trades union wages, and are fairly well-to-do, but the latter, the unskilled and casual labourers, are, like the same class in the country, always engaged in a fight against

absolute want. So long as they can find employment they and their families manage to live, although in many cases they are underfed, but once their employment ceases they have no reserves to fall back upon, and unless they receive relief they are reduced to the starvation level. Rent is for them a serious question, and the margin left for food is at all times a small one. In the town food is more expensive, and milk in sufficient quantity for the children is beyond their resources.

The following table shows the low wages and poor feeding of the Dublin unskilled labourer. It is extracted from Sir T. J. Stafford's evidence before the Royal Commission on the Poor Laws and Relief of Distress.

TABLE E.—WAGES AND FOOD EXPENDITURE IN DUBLIN, EDINBURGH, AND YORK.

——	Average Income per week		Food Expenditure per week		Protein per man per day
	s.	d.	s.	d.	grammes
Dublin (all families) . . .	23	2¼	13	3¾	98
,, (unskilled labour) . .	16	7½	10	4	81
,, (Guinness' employees) .	29	6	15	4½	98
Edinburgh	25	10	16	7½	108
York	19	8	10	4½	89

The openings for the employment of women vary with the part of the country. In the north the linen industry, also shirt and collar making, and in other parts the manufacture of woollens, give employment to large numbers of women, and the wages are fairly good, but in many towns there is no means by which the mother can increase the family budget; all must rely on the income of the father.

The industrial employment of married women is an important question, and although one may regret such employment, which almost of necessity leads to the abandonment of breast-feeding, one is forced to acknowledge that where the wages of the father are insufficient to supply the food necessary for the

family, it is a good thing for the mother, by such work, to increase the family income. We must try to place ourselves in the position of the woman who finds herself faced by this problem—"Is it better to work when pregnant, and after the birth of the child, and, at the same time to have sufficient food, or to stop work and exist in a state of semi-starvation? The conclusion of Sir Arthur Newsholme, M.D., is of importance. "Great poverty has more influence in increasing infant mortality than the industrial employment of the mothers."

The skilled workers of the towns are, on the whole, well paid. Poverty is not a factor with which they and their children have to contend.

It is, unfortunately impossible to show the incidence of infant mortality for the different classes of the population, but the following figures, which relate to the Dublin Registration Area, are given:—

TABLE F.—CLASS INCIDENCE OF CHILD MORTALITY AND OF DEATHS FROM DIARRHŒA AND ENTERITIS UNDER 2 YEARS OF AGE (DUBLIN REGISTRATION AREA) 1913-1915.[1]

Class	Population in Class	Deaths under 5 years				Deaths from Diarrhoea and Enteritis under 2 years of age			
		No. 1913	No. 1914	No. 1915	Average of Rates per 10,000 of Population 1913–15	No. 1913	No. 1914	No. 1915	Average of Rates per 10,000 of Population 1913–15
1. Professional and Independent	14,658	8	8	13	7	3	—	1	1
2. Middle .	101,798	233	194	240	22	45	17	29	3
3. Artisan and petty shopkeeper .	108,420	521	576	491	49	108	67	67	7
4. General Service .	167,479	1,499	1,738	1,694	98	315	222	275	16
5. Hawkers, Porters, Labourers . (Part of class 4)	103,081	1,221	1,367	1,124	120	254	162	169	19

[1] Deaths in Workhouses are not included.

This shows with perfect clearness the great increase in child (and, therefore, infant) mortality, coincident with a lowering of the economic condition of the family. The average rate of mortality under five years for the middle class in the years 1913-15 is more than three times that of the professional and independent class. The rate of the artisan class is much more than twice that of the middle class, and the general service class just double that of the artisan class. The rate for hawkers, porters and labourers, who constitute the greater part of the general service class, when shown alone is more than twenty per cent. in excess of that group.

Much the same relations hold good for the diarrhœa and enteritis mortality rate. So poverty, by means of the influence which it exerts on the parents, the food and the environment of the infant, is a serious factor in the causation of infant mortality.

The foregoing conclusions as to the influence on infant mortality of the poverty of the parents are borne out by the facts obtained by an intensive study of a large number of consecutive infants' deaths taken from the death registers in a number of urban and rural districts in different parts of Ireland. (See Appendix, Table XV., page 197.)

There are two towns in County Down which are fairly close together and have much the same population, but whose infantile death-rates are very dissimilar. These towns are Newtownards and Bangor. A consideration and comparison of these may illustrate some of the factors which cause a high infant death-rate.

TABLE G.—INFANT AND GENERAL MORTALITY RATES IN NEWTOWNARDS AND BANGOR URBAN DISTRICTS, 1914.

	Population	Births	Deaths under 1 year	No. per 1,000 Births	Death-rate (all ages)
Newtownards	9,587	232	36	155	17.9
Bangor	7,776	162	9	55	11.3

The general death-rate of Newtownards we see is considerably above that of Bangor, but the infant death-rate is almost three times Bangor's.

In Newtownards, of the 36 infants who died—

16 were the children of labourers.
4 were the children of soldiers.
3 were the children of weavers.
3 were the children of blacksmiths.
10 were the children of petty shopkeepers, traders, &c.

Of these deaths—11 (47.4 per thousand births) were due to debility, 11 (47.4 per thousand births) were due to gastro-enteritis, 7 (30.2 per thousand births) were due to bronchitis and pneumonia, 3 (13 per thousand births) were due to pertussis, 3 (13 per thousand births) were due to marasmus and convulsions.

These are very high rates even for the towns in Ireland. They show the heavy incidence of prematurity and other congenital causes, the result of improper feeding and the effects of exposure.

In Bangor, the nine deaths were among children of 2 labourers, 2 plumbers, 1 sailor, 1 brassmoulder, 1 painter, 1 bricklayer, 1 boiler-maker. The causes of death were—3 bronchitis and pneumonia, 2 prematurity and debility, 1 infant diarrhœa, 1 convulsions, 1 asphyxia, 1 intestinal obstruction. We observe that all the infant deaths in Bangor occurred among the working classes, while the majority of the inhabitants are comparatively well-to-do.

The two towns are a complete contrast—Newtownards is a manufacturing town, the majority of its inhabitants are work-people, and a large number of the women are employed in the factories; many of them are comparatively poor. Bangor is a seaside and residential town. In it many business people from Belfast, and those who have retired, live. There are practically no works, no industrial employment of women, and very few poor.

The contrast of these two towns situated a few miles apart, with the same climate and other natural conditions, but very different economic conditions, shows the effect of poverty and labour on the rate of infant mortality.

At the present time there is, owing to the war, very little unemployment, and wages are high in Irish towns, so one might

hope that these facts would have a corresponding effect on the infant mortality rate throughout the country, but unfortunately the cost of food, fuel, &c., has increased, and thus where the family is large the higher wages have been counterbalanced by the increased cost of necessaries. In Belfast, however, the infant mortality for 1916 calculated from the weekly returns shows a considerable reduction; it would be impossible, at present, to say how far this reduction may be due to a fall in the birth-rate and consequently fewer deaths amongst the poor owing to the enlistment of a large number of unskilled workers, or how far it may be due to increased income owing to separation allowances and higher wages; possibly all these factors contribute.

3. DOMESTIC SURROUNDINGS.

The conditions of the houses of the small farmers and labourers in Ireland have long been notorious. The cabin with mud-built walls, hermetically sealed windows, and tightly closed door, shared by the family and a miscellaneous collection of dogs, fowl, and perhaps a pig and a donkey, its atmosphere an almost irrespirable mixture of odours, and with a manure heap opposite the door, was to many people the characteristic representative of the homes of the poorer class of Irish farmers and labourers; and unfortunately there was a certain basis of truth in the unpleasing picture. But of late years, a very great change has come over the country. Through the administration of the Labourers (Ireland) Acts by the Local Government Board, nearly 50,000 cottages, with garden plots varying in size from half an acre to one acre, have been built for rural labourers by rural sanitary authorities at an outlay of over eight million pounds. (See Appendix, Table XIV., page 196.) Part of this sum was paid by the State and part was lent at 3¼ per cent. The average rent of a cottage with half an acre of land is 11d., and with one acre 1s. 2d. per week, but the rents vary according to the circumstances of each rural district. The rents are not sufficient to discharge the annual liability in respect of

the loans advanced for the cottages and plots, the deficit being made up by each rural district council from the local rates. These houses have not only provided superior dwellings for the 50,000 families which inhabit them, but have also by their example had an excellent effect in improving the conditions of the other houses in the district—both labourers' and farmers'—and also, in some cases, in lowering the rents. The plans of these cottages vary with the local authority building them, but must conform to the requirements of the Local Government Board; they have, as a rule, a large living room and two (or in many three) sleeping rooms. The windows are made to open, and at last their inhabitants are beginning to realise the advantages and necessity of fresh air. Sanitary privies at some distance from the houses replace the abominations of old days. The practice of allowing domestic animals to share in the human habitation has almost ceased, and the fact that a manure heap is a breeding place for flies, and a most dangerous thing to have close to a house, is gradually being made evident to the labourers and farmers through the country, with satisfactory results. The change in the manner in which these houses are kept is most gratifying; the good woman of the house finds that she now has a home which can be kept clean, the floors can be scrubbed (an impossibility with earthen floors), and the windows admit of the entry of air and sunlight. All her inherent domestic pride is aroused, and she makes up her mind that her house will be clean, and it is clean.

The Congested Districts Board have also done much to improve the housing accommodation in the districts to which the operations of the Board extend. Over 8,000 dwellings have been built, or substantially improved, with assistance from the Board.

There are still some labourers' houses which are in an unsatisfactory and insanitary state, but their number is decreasing. The following table (from the Report of the 1911 Census) shows the improvement in housing in twenty years—it has been considerably improved since then as well.

TABLE H.—NUMBER OF HOUSES OF EACH CLASS OCCUPIED IN 1891, 1901 AND 1911:—

Class of House	1911	1901	1891
1st Class .	6.1	5.3	4.8
2nd ,, .	64.2	55.3	47.7
3rd ,, .	29.0	38.0	44.6
4th ,, .	0.7	1.4	2.9

The influence of the home has undoubtedly a most important bearing on the health of the infants and children living in it. If the house is badly built and insanitary, the mother will gradually give up the struggle for cleanliness, and will relapse into a state of dirt herself. In consequence, the child will be dirty, and the food dirty, and so the conditions necessary for the production of some of the most fatal diseases of infancy and childhood will be present.

On the other hand, a well-built house, one which it is possible to keep clean, inspires the mother to keep it in this state, and this has its effect on all those living within it, but most on the infant whose power of resistance to disease is very much lower than an adult's. Fresh air and clean food are the two great essentials for infants, and the labourers' cottages make it possible to provide them with both. The garden plot around the house offers profitable and healthy work for the mother, and this work has the great advantage that it does not take the mother away from her infant or necessitate the abandoning of breast feeding.

The rent of these cottages does not absorb an undue proportion of the labourer's weekly wage, and the potatoes and vegetables which can be grown in the plot represent a very considerable source of income to the tenant—an income of healthy food, which is equivalent to money.

In towns the housing conditions are, as a rule, very much worse than in the worst parts of the country. The houses are small and often dilapidated, damp, and ill-ventilated, the privies are primitive and insanitary. Earthen floors and un-

paved yards are common. Such conditions are full of danger for the infant. The houses are almost impossible to keep clean, and there is no place where the child may be left in the open air, except in the yard, usually the abode of flies, and the collecting place for the odours of varying sorts of decaying garbage. The houses lack any accommodation for the storing of milk or other food which rapidly is contaminated by flies and dust, especially in the hot weather. Gastro-intestinal disorders are the natural results.

It has been stated that the most serious factor in deciding the infant mortality rate of a city is not the density of population per acre but the density per inhabited room. An interesting calculation goes to prove this. There are in London the Peabody Buildings, which are cheap dwellings for the poor. They are managed by the Peabody Trustees, and the most scrupulous attention is paid to sanitation and the prevention of overcrowding in rooms. In them the density of population was 504 persons per acre (nearly eight times that of London), but only 1.8 per room. In them the infant mortality rate was 92, when the rate for London was 120. In 1914 London's rate was 103, but the Peabody Buildings' rate only 77.

This tends to prove that domestic and not municipal crowding is the most important factor. Unfortunately, in some of the Irish county boroughs, especially in the older ones, the tenement house system is in vogue. It is almost impossible to overestimate the evils of this way of living. A family consisting of father, mother, and perhaps half-a-dozen children, living, cooking, eating and sleeping in one room, produces a state of affairs which one would hardly credit as existing in a civilised country. The sanitary accommodation is in the yard below; there is in many no provision for washing, either personal or domestic, or for the emptying of slops; water has to be carried up many steps, and when water is procured at such labour, one may be certain that washing is at a minimum. Just think of a confinement taking place in such a room and of the dangers surrounding the infant from the hour of its birth. One

naturally wonders how it is possible for a mother or a child to live at all in such a place. There is just one good thing to be said for the tenement house—the rooms are large.

Dublin is notorious for the prevalence of the tenement house system—20,108 families living in one-room tenements in that city. 12,042, numbering in all 73,973 persons, show an average of over six persons living in one room. Belfast has only 448 one-room tenements; Cork, 1,511; Limerick, 1,005; Waterford, 353; Londonderry, 554; and Galway, 186. In none of these are the conditions so bad as in Dublin. The Report of the Departmental Committee on the Housing Conditions of the Working Classes in the City of Dublin (1914) has clearly shown the deplorable condition of the tenement house system. There are nearly a third of the total population of the City of Dublin living in one-room tenements. "There are many tenement houses with seven or eight rooms that house a family in each room, and contain a population of between forty and fifty souls. We have visited one house that we found to be occupied by 98 persons, another by 74, and a third by 73."

"We fully endorse the evidence given by many witnesses that the surroundings of a tenement house in which there can be no privacy, and in which the children scarcely realise the meaning of the word 'home' form the worst possible atmosphere for the up-bringing of the younger generation who, as one of the witnesses stated, acquire a precocious knowledge of evil from early childhood."

It would be far too much to expect that children brought up in such tenements would become patriotic, contented and industrious citizens. The conditions of slum life, poverty, illness, &c., are important fundamental causes of disaffection.

The explanation of the tenement house system is simple. Formerly the nobility and gentry of the country had town houses in Dublin, and often in their county town as well. But the Act of Union made Dublin less of a capital, and trains and steamships brought London so close to Ireland that the Dublin houses were gradually abandoned. They were too large for the middle classes, and so having lain empty for some years, and

fallen into a state of disrepair, they were bought by enterprising property-mongers and let out in single rooms to working-class families. The weekly rent for one room varies from 2s. to 3s. 6d.

Belfast, being a city of modern growth, has no inherited burden of useless and unsuitable houses, and so is well provided with suitable sanitary and convenient workers' houses. The rent of a three-room house is from 2s. 6d. to 3s. 6d. a week. Each has its own water-closet, and a water supply in the house. Such accommodation makes for the welfare of the children.

Under the Housing of the Working Classes Acts, about 9,130 houses or tenements have been erected in Irish towns by local authorities at an expenditure of approximately one and a half millions sterling. These have helped to lessen the acuteness of the problem in some towns, and after the war we may hope to see a further great improvement in the housing of the town workers with a corresponding lowering of the infant mortality rates. The local authorities must, however, supply houses for the poorest labouring classes which can be let at a very low rent. These are the people who are most urgently in need of decent houses in which the possibility of bringing up a healthy family from birth may be increased.

4. EXTRA-DOMESTIC SURROUNDINGS.

While it may be allowed that the actual home conditions are more important to the pregnant mother, the infant and the child, than the surroundings of the home with the various influences acting on them, yet these latter are not to be ignored.

A man and woman, healthy in themselves and thoroughly understanding the laws of health, who lived an isolated existence far from other human beings would be able to bring into the world healthy infants who would grow up to be healthy boys and girls. But man is a gregarious animal, and the present social conditions demand that men with their families should live in communities, in close contact one with another.

Theoretically, one would expect that in districts where the houses are scattered at considerable distances apart, where the density of population is small, the infant mortality rate would

also be small. And this holds fairly true in practice. Roscommon is the county with the lowest infant mortality rate, and it is one of the least densely populated, while Dublin County Borough, with a very dense population, has an infant mortality rate of 160.3 per thousand births.

The less contact with other human beings that there is, the less risk is there of infection—but one of the objects of public health administration is to minimise this risk of infection.

In small towns the difficulty is to ensure a good water supply and to provide a satisfactory sewage disposal scheme. Large cities with great financial resources are able to do this adequately, and in Ireland no complaint can be made about them, but in some of the smaller towns there is still much to be desired. Where a water-borne sewerage scheme is not possible, there can be but few water-closets; and privies are often in an unsatisfactory state. The middens and other rubbish heaps are not cleared sufficiently often. These are important matters, for flies breed on such filth and contaminate all food in the houses with their feet.

The means for the removal of domestic refuse are worthy of note. In Dublin such material is removed daily, or on alternate days in covered bins. The same measures are adopted in Belfast, but not to such a considerable extent; ashpits still remain too common. In most of the smaller towns ashpits are the rule and not the exception.

All villages, towns and cities require to have all manure heaps and collections of domestic rubbish cleared away frequently to avoid a plague of flies. Streets and roads should be frequently scavenged and watered or tarred to prevent the spread of dust—another very real danger. It is the duty of every urban authority to have all streets and lanes properly made, and all yards and passages paved or concreted. Unless this is done, the members of the family bring into the house an unnecessary amount of the unsavoury mess from the surface of the road and yard. The housewife cannot contend against this for long, and the result is that the house approximates to the condition which prevails outside.

It is doubtful if the difference of climate in different parts

of Ireland has much effect on the mortality among infants except indirectly. But the variations from year to year have a very large and important influence on the infant death-rate. The rate of mortality from gastro-intestinal disorders in infants is almost directly proportional to the heat of the summer, and inversely proportional to the rainfall in the summer months. Again, a severe winter produces its crop of deaths among infants from pneumonia and bronchitis—especially where insufficient clothing assists the severity of the climate, and where the resisting power is lowered by insufficient food.

The situation of the house has an important influence on the food supplied to the infant. In the towns it is very difficult for the poor mother to obtain good milk, fresh and at a reasonable rate. In some parts of the country, notably in Meath, Westmeath, and part of Galway, where cattle are raised for meat and there is little dairy farming, milk is very scarce or almost unobtainable. Creameries have usually a beneficial effect on the milk problem, for they, as a rule, are willing to sell milk in small quantities to those requiring it. When the price is high, however, there is a temptation to send as much as possible to the creamery and to attempt to feed infants on skim milk—an altogether unsuitable diet.

5. THE HEALTH AND HABITS OF MOTHER AND FATHER.

A father and mother, either or both of whom suffer from disease, may produce a healthy child, but the chances are against it. In Ireland where so many are chronically under-fed, it is little wonder that there is much disease among infants and children.

In other countries one of the chief diseases of the parents which has a considerable influence in causing infant mortality is syphilis. This has already been referred to as one of the causes of abortions, miscarriages, prematurity, and marasmus in infants, and it has been shown that, apart from Dublin and Belfast, the disease is not common in Ireland. The deaths of infants, stated to be due to syphilis, amount to .7 per cent. of the whole; and though this figure is probably too low, the number

cannot be large. Syphilis is not accountable for many of the deaths of infants in Ireland. Gonorrhœa, while not causing the deaths of infants, is often associated with sterility in females. It is also a most usual cause of a serious, though non-fatal disease, of infants—Ophthalmia Neonatorum, which, if neglected, causes blindness. Ireland is, however, very free from blindness caused by this disease. The evidence given to the Commission on the Blind in 1915 on behalf of the Local Government Board went to show that there were two factors to account for the freedom from blindness caused by ophthalmia neonatorum in Ireland. The first was that venereal disease was less prevalent than in any other portion of the United Kingdom, and the second was the printed instructions issued by the Local Government Board to all dispensary midwives as to how to prevent the occurrence of cases of ophthalmia neonatorum, and what to do when cases occurred.

Alcoholism of either father or mother exerts a baneful effect on the child, both directly and indirectly. Intemperance in Ireland is now much less common than formerly, and although still all too prevalent among men, it is rare among women, especially in the country. (See Appendix, Table XVII., page 205.) It undoubtedly wastes the wages of the father, when he is the victim, thus depriving the children of their food, and clothing, and has a bad effect on his "germ cells" which are directly responsible for his child's being. The connection between feeble-mindedness in the child and alcoholism in the parent may be regarded as practically proved. Some of the Medical Officers of Health report that intemperance among women, especially among soldiers' wives is on the increase in consequence of the large separation allowances. This is a serious matter, likely to prejudice the infant lives both by its direct effect on the mother's health, and indirectly by the increase of neglect and carelessness on the mother's part.

Tuberculosis, although it is seldom, if ever, transferred from mother to child before birth, may be acquired by the latter from the former soon after birth. It accounts for about $2\frac{1}{2}$ per cent. of the deaths of infants under one year. It must, however, be borne in mind that the trend of recent scientific

investigation goes to show that tuberculosis in infants is more commonly of the bovine type and is acquired from cows' milk rather than from infection by human beings.

6. AFFECTION OF MOTHER FOR HER CHILD; HER EDUCATION FOR MOTHERHOOD.

The Irish mother is celebrated throughout the world for the affection she has for her offspring. It is only among the most drunken and debased in the towns that there is any wilful neglect of or cruelty to children. But affection, unfortunately, is not sufficient. Love teaches much, but it does not teach all that it behoves a mother to know in cities and towns to-day. The truth is that, although she loves her child, she is not fitted for motherhood. The fault is not hers, but is that of the system of education in this country. All that she knows about her functions, childbearing and child nurture is what she has learned from her mother; it has been handed down from generation to generation, and is a blend of good and bad, a mingling of useful knowledge and harmful superstition. Though she went to the national school, she was taught nothing that would fit her for her work of bringing into the world and rearing a strong and healthy family of sons and daughters.

She knows, however, just one thing and that, perhaps, the most valuable of all—that she was intended to suckle her children herself, and doing this, she saves her children from the many dangers surrounding the use of the bottle. The practice of breast feeding is almost universal among the poorer mothers in the country, and is still very common in town. Often, however, necessity compels them to abandon breast feeding. There are some mothers of the middle and upper classes who think that they are not able or that they are too highly developed to do their duty in this way. The immense importance of breast feeding for the infant cannot be insisted on too often, and it should be widely known that suckling has a most beneficial effect on the health of the mother in hastening her recovery after the confinement. The infant is greatly exposed to the dangers of food-poisoning, &c., if he is bottle-fed rather than breast-fed, for he encounters the greater liability to accident

by the artificial method, and lacks the anti-bodies which he would get from his mother's milk.

It should be impressed upon every mother that she is capable of rendering her child less liable to disease by breast feeding than by artificial feeding. There are some grounds for believing that the maternal milk increases the resisting power of the infant, and the milk which comes soon after the birth of the infant has the advantage in this respect over the later milk.

In many parts the mothers are either ignorant of when to wean, or are unwilling to do it, with the result that babies of two years' old are still at the breast. These children are not getting sufficient nourishment from the mother's milk for their age, and the practice is very exhausting for the mother.

When the child is weaned, many new and terrible dangers confront him, for the mother frequently has not the slightest idea of what is suitable food for a baby. No less than 157 of the medical officers advance improper feeding as one of the important factors in the causation of infant mortality (see Appendix, Table XVII., page 205), and in very many cases the mother does not know what is proper feeding.

The traditional and instinctive lore of the mother in the country may be of some small value, but in towns where the conditions are so absolutely different and artificial it loses any value it ever had, and often it even becomes harmful.

The great evil is lack of good mother-craft. That alone would overcome almost any difficulty (short of an impossible economic condition), and save countless infant lives. But mother-craft is not instinctive any more than is reading or writing, it must be taught in the schools or elsewhere; what we want is some method by which the mothers may be instructed in the elementary facts about infant management. At present, when a birth is registered, the registrar supplies the mother with the papers relating to vaccination, and also with a leaflet giving some information about the feeding and care of infants. There are, however, grounds for believing that in most cases both papers are carefully put away and never again looked at until the infant is taken to be vaccinated, when both notices are handed to the doctor. But leaflets with printed instruc-

tions, even if read, are often useless. The rules laid down are not grasped or are ignored as mere fads. Nothing but personal instruction and example, and those often repeated, will do any good.

7. LEGITIMACY AND ILLEGITIMACY.

In Ireland in 1915 there were 3.1 per cent. of illegitimate births. The figures vary from .8 per cent. in Connaught to 4.0 per cent. in Ulster. The circumstances surrounding the birth of an illegitimate child are such as to give it a much worse chance of life than a legitimate child, so one is not surprised that the infant mortality rate of the former is very much above that of the latter.

As an example, the case of a northern town may be cited. This town has the highest illegitimacy rate in Ireland (10.7 per cent.). In 1914, 207 legitimate children were born, and of these 26 died, giving an infant mortality rate of 125.6 per thousand births. In the same year 25 illegitimate children were born and 8 died, giving an infant mortality rate of 320 per thousand births. That is, the death-rate among the illegitimate was more than $2\frac{1}{2}$ times that of the legitimate. These figures were taken from the local death registers, as the Registrar-General's Returns give no particulars of the death-rate of illegitimate children.

Probably the chief causes of this difference are the lack of care of the child, the frequent absence of breast-feeding, the greater frequency of syphilis among the fathers and mothers of such children than in the general population, the working of the mother (often a domestic servant) till very late in pregnancy, the mental condition of the mother during pregnancy, and possibly the unsuccessful use of diachylon or other drug for the purpose of procuring abortion.

8. SIZE OF FAMILY.

The size of the family has a considerable influence on the rate of infant mortality. The first labour is always a slow one, and this causes more danger to the life of the child. In addition, the mother has less experience in the care of children

and sometimes is in a better position to look after subsequent children than the first one; she profits by the mistakes she made at the expense of the first child. Against these must be placed the facts that the first labour is more of an " event " and better attendance is secured than at subsequent confinements, and if the family income is small a larger proportion of it can be devoted to the first than to subsequent children. If pregnancies follow one another in rapid succession, the vitality of the mother is lowered, she is unable properly to suckle her children, and has less time to devote both to her children individually and to the cleanliness of the home.

We know that in Ireland, although the birth-rate is low, the marriage-rate is also very low. The question of the fertility of marriage formed the subject of special investigation in connection with the last Census, and the results show the average number of children born alive per family to be:—Ireland, 4.09; Scotland, 4.01; and England and Wales, 3.55. Consequently the popular conception that in Ireland the families are larger than in England has been found correct. This is also borne out by the information obtained by inquiry in different towns and districts in Ireland. (See Appendix, Table XV., page 197.) The birth-rate in Ireland has been continuously falling during the past ten years, and while the decline is not so great as it is in England, yet it is very serious. The number of births in 1904 was 103,811, and in 1914, 98,806. The number of births in 1915 was over 3,000 less than 1914, but the number was, no doubt, affected by the war conditions. What makes the fall so serious is the difficulty of devising a means for its arrest. The best way to increase the number of children in the country is to keep alive as many as possible of those who are born.

The fact that the mortality rates among male infants are higher than among female may be mentioned. In 1915 the rate for male infants was 100 and for female 83 per thousand births. This excess holds good for almost every cause of death. This would appear to offer a field for scientific investigation, but it is doubtful if the result would be commensurate with the time and labour which would be required.

9. AGE OF MOTHER AT MARRIAGE.

In 1915, 6.81 per cent. of the women married were not of full age, and 1.95 per cent. of the men were also under age. In England the figures were much higher.

On examining the provinces it is found that in Ulster 8.48 per cent., in Leinster 7.08 per cent., in Munster 4.91 per cent., and in Connaught 3.74 per cent. of the women married were not of full age.

The most common age of marriage of women was between 21 and 25. Two were married at between 15 and 16 years old, ten between 16 and 17, and forty-eight between 17 and 18 years (1914).

The very young mother is often less experienced than an older woman, and is sometimes neither so careful nor dependable, but on the other hand her mind is more receptive of any information imparted to her, and she is more willing to take advice.

Although very early pregnancies are more dangerous both for the mother and the child than those occurring at a more mature age, the other danger, that of late marriage and child bearing must also be remembered. No confinement is more risky for both mother and child than that of the elderly primipara, and it is to be feared that this is of somewhat frequent occurrence in some of the rural districts in Ireland. In certain parts of the West it frequently happens that the young woman of seventeen or eighteen goes to America and works there for ten to twenty years at domestic service or some other employment. Then she returns to her native part and marries, for her dowry now makes marriage possible for her. But her often unhealthy life in the city makes her not very highly fitted for matrimony, and often she or her child falls a victim to the dangers incident to birth.

Another cause of late marriage is also to be mentioned. It is generally the custom in most rural districts in Ireland for the eldest son, when he marries, to bring his wife to his father's farm, of which she becomes mistress, displacing the mother. But he cannot bring in his wife till his sisters are settled, and

that is impossible without a dowry for them. All the savings of the household go towards these dowries, and it follows that as the sisters become older their dowries grow larger, and consequently their chances of marriage are increased. The result of the system of dowries is that the age of marriage of both males and females is very late—the thirties for women, the forties for men, for frequently a man must " marry off " a sister fifteen years younger than himself before he can think of matrimony. The medical officer of a western district, in an interesting communication (in which he states that the most common age for the marriage of men in his district is 40 to 50), gives his opinion that the late marriage at a time when the parties have lost much of that vitality of youth on which the racial strength depends, is a cause of lack of vitality in the children which has its effect both on their mental and physical natures, and which is in his opinion tending towards a serious racial degeneration.

On the other hand early marriages are common in the manufacturing towns. In many of these towns it is the practice, where the family income is small, for the girls to go to the spinning mills as early as twelve years of age. These young girls, who are called " half-timers," work from 6.30 a.m. until 6 p.m., on alternate days each week, with three-quarters of an hour for breakfast and three-quarters of an hour for dinner. The usual half-holiday is given on Saturday. Consequently they are employed for thirty hours one week, and twenty-five hours the following week. The weekly wage is from 5s. 3d. to 6s. 3d. according to age and the quality of the work. Girls over thirteen years of age can work full time if they have a certificate of having passed a certain standard of education, and if they are over fourteen years of age without such a certificate. " Half-timers " continue to work in the mills, some becoming in time spinners, earning fair wages, and when they reach nineteen or twenty years of age they marry, but continue their occupation until one or two children are born, when they have to stay at home to look after the children and keep the house. On account of having had to work during the critical

period before adolescence they are not strong, and moreover, not having any training in housekeeping or in the care or management of children, the home is not kept as clean and comfortable as it might be, and the children not being well cared for are fretful. The husband, on returning home after his day's work, does not find the home an attractive place, and he goes to seek more congenial surroundings in the public-house, where he spends a portion of his wages on drink. The husband's wages, or at least the portion he gives to his wife, to keep the family, are insufficient to provide suitable food and other necessaries, with the result that there is discontent, unhappiness and ill-health.

The parents who, owing to poverty, are unable to provide sufficient food and clothing for their families, and are forced to allow their daughters of twelve years of age to seek employment in the spinning mills as "half-timers," cannot be held responsible as their only choice is between the semi-starvation of the family and the employment of their children at the earliest age allowed by law.

It must, however, be evident to everyone that girls who have to begin to work at such an early age as twelve years will be seriously handicapped physically when they become mothers. Is it any wonder that a large proportion of the children of such mothers either die or are permanently disabled? The children who survive, no doubt, in time become "half-timers" themselves. Whatever the economic remedy may be, I think I have shown that this system which constitutes a vicious circle should be broken if the growth and physical development of young girls is not to be arrested at a time when they should be growing into healthy women—the potential mothers of healthy children—for healthy parents are the first essential of healthy children. The manufacturers who employ "half-timers" are contributing to the perpetuation of a great national wrong which cries aloud for redress. It would be in the interests of humanity, and in the long run it would be in the interests of the employers also, to break this circle by the abolition of the half-time system, and by raising the age of

those employed on full time to fifteen years. Girls should continue their attendance at school and possibly attend cooking, housekeeping and mothercraft classes until they reach fifteen years of age at least.

10. SUPERVISION OF MILK AND FOOD SUPPLIES.

Milk for the use of infants may either be adulterated by the addition of water, a practice common in most towns which still persists in spite of repeated fines and even imprisonment of the vendors, or contaminated. There are many ways in which it may be contaminated:

"It may be drawn from a diseased cow; it is liable to fæcal contamination in the farmyard or by contact with the dirty clothes or hands of the milker; it may be drawn into cans washed with impure water, or not washed at all. Then in transit, it is exposed to the heat of the sun's rays and to the entrance of dust from the road or the railway platform; in the railway van it may be stowed near unsavoury articles. Under the lid of the tankard there may be a filthy cloth or newspaper, and a brass measuring strip in the can may harbour dirt. In the milkshop there are further possibilities of contamination if the receptacles be not constantly covered, as for example, from flies. In huxters' shops it is liable to receive a taint or odour from articles such as paraffin oil, vegetables, &c., as well as pollution from the dirt of the shop; or it may be that the vessels containing the milk are not clean. Sometimes the shops themselves and their surroundings are wholly unsuitable. During distribution further opportunities of contamination occur. It may be that the milk is sold by the vendor in the street under circumstances which render it impossible to prevent dust getting into the milk. Dishonest servants may tamper with the milk as by adding water from a polluted stream or ditch. Cases of infection have occurred through contact of the milk with a typhoid carrier, or with persons who were in the family or employment of a dairyman suffering from infectious disease. Finally, milk is liable to contamination in the home of the consumer in several of the ways already enumerated, *e.g.*, by flies, by the use of dirty jugs,

by proximity to articles in the larder which give a taint to milk. Sometimes the larder is near the ashpit" (sometimes, even often, there is no larder).

This extract from the Final Report of the Irish Milk Commission, 1911, shows graphically the various ways in which the milk may be contaminated and made a source of danger to the infant. That this fear of contamination of milk is a very real one is shown by the fact that it was proved recently that some of the milk supplied to London contains on an average more than 3,000,000 bacteria per cubic centimetre—approximately the quantity contained in sewage. Such milk should only be used for cooking, it is quite unfit for human, and especially infant, food in its raw state.

Professor D. Houston, of the Royal College of Science, Dublin, who has made a particular study of the bacteriology of milk, has favoured me with a communication on the subject.

"So far as the country as a whole is concerned," he says, I am afraid there is a woeful lack of cleanliness as well as inattention to such details as straining and cooling. In a large number of cases the milk delivered is so foul and acid that it cannot stand without curdling the relatively high pasteurising temperature of 185° F. ordinarily adopted in Irish creameries.

"I have examined from time to time a large number of samples of Dublin milk—in one series about sixty—the plan being to make out a list of registered milk shops from the Directory, selecting at random, but covering districts ranging from Rathfarnham to Clontarf, and Glasnevin to Ballsbridge. On the whole, the milks fall below the usual standard of purity so far as bacterial pollutions are concerned. It was also discovered that some of the supply sold under the description "pasteurised milk" was among the lowest grades of all. This is always the result if the pasteurisation is inefficiently done. One of the tests for contamination by fresh dung is the "bacillus coli test." Clean milk—that is carefully handled milk, clean cows, clean milkers and clean cans—never contains bacillus coli; dirty milk—in the bacteriological sense—always does. In the series of Dublin milks I refer to very few samples indeed passed this test. Another test for the presence of a harmful

gas-forming bacterium was found to be positive in a large number of cases. In connection with this, I may mention that a well-known medical man in Dublin was concerned over an intestinal trouble affecting one of his children, and at last suspected the milk. He sent me a sample; when tested it was found to contain this particular germ in considerable numbers, and so the cause of the trouble became known. It is fairly certain that a great deal of illness among cow-milk-fed infants and children generally is due to impure milk. And, as if these risks were not serious enough, they are deliberately added to by dosing the dirty milk with boric acid preservatives.

"To me it is unthinkable to allow the use of preservatives in milk. There is at least some safeguard in souring, first the lactic acid prevents to a large extent the growth of the other bacteria present, and second it tells the approach of unfitness. I have cases over and over again of preservatives inhibiting the souring germs, but not the real harmful ones, and so mothers are tricked into giving their infants apparently good (because sweet) milk when in point of fact the sample is unfit for feeding a young child. I have been given cream in tearooms in Dublin so heavily dosed with preservatives that their presence was easily recognised by the taste alone.

"Generally, with regard to the purity (that is bacteriological purity) of the Dublin milk supply so far as I have had time to investigate it, I find that there is considerable, very considerable room for betterment. The past season has been, in my experience, the worst for years. For example, requiring a gallon or two of fairly pure milk for my experimental work, it took me exactly a fortnight to get a sample that would pass my test. Some samples were sour, others would not sour at all for days, a large number contained heat resisting germs that exposure to live steam for twenty minutes would not kill, many contained gas-formers and the majority were positive to the bacillus coli test. In souring tests a few formed jelly-like curd, some curdled and then peptonised, others formed gaseous curd, and in others again the curd quickly separated from the whey which tasted rankly acid.

"And upon all these types of milk the Dublin children are fed—it is no wonder at all that the chances of life with infants born in Dublin are less during the first twelve months than that of our fighting men in the trenches in France. Bad milk takes its place beside insanitary conditions of life and low feeding as a factor in producing the high infant mortality in this city. Purity of milk in the official as well as the public mind seems simply to be a question as to whether its food value has been reduced by the intentional addition of water."

Professor Houston has not referred to the presence of the tubercle bacillus in milk; this organism is probably the most dangerous of all the milk bacteria to infants. All milks arriving in a town or city should be tested periodically for its presence, for the experience of some English cities shows how commonly this deadly micro-organism is present in milk. It is only by frequent bacteriological examination that it can be discovered, and the source of infection traced to the diseased cow.

If the disease is in the udder, the milk is certain to be infected, and under the provision of the Tuberculosis Prevention (Ireland) Act, 1908, and by the Tuberculosis (Ireland) Order of 1914, the affected animals must be slaughtered and compensation paid. Cows which are clinically tuberculous, though the udders are not infected, are a source of danger and may be compulsorily slaughtered on the report of a Veterinary Inspector.

The Dairies, Cowsheds, and Milkshops (Ireland) Order.

The Dairies, Cowsheds and Milkshops (Ireland) Order of 1908, imposes on the local authorities the duty of exercising supervision over the details of the production and sale of milk and the prevention of contamination. If strictly enforced it would secure:

1. The discovery of dairy cows with tuberculous udders.
2. The housing of cows in sanitary, lighted and ventilated byres.
3. The daily cleaning of the byres.

4. The cleaning of the udders and flanks of cows before milking.
5. Cleanliness of hands and clothes of milker.
6. A clean water supply for watering cattle and cleaning utensils.
7. Cleanliness of milk stores or shops and milk vessels.
8. The prevention of contamination of milk by forbidding it to be kept in any living room, or where exposed to impure air or contact with any person suffering from infectious disease.
9. The notification by a purveyor of milk of the existence of infectious or contagious disease on his premises, or amongst persons employed in his business, and the cessation of the sale of milk by him until the Medical Officer of Health shall have declared the premises or persons to be free from infection.

It is unfortunate that this Order, which enables the local authorities to see that the milk sold is pure and good, has not always been rigidly enforced by them. Nevertheless, since it came into force there has been generally a very great improvement in the conditions under which milk is produced and sold.

There is evidence to show that in certain parts of the country milk is unprocurable, even for money. The causes blamed for this state of affairs have been:

(*a*) The replacing of milch cattle by store cattle.
(*b*) The Dairies and Cowsheds Order.
(*c*) Creameries.

All these have probably some little effect but chiefly the first. Creameries as an alleged cause of milk scarcity have been mentioned before. The best means to prevent this, if it does exist, would seem to be for the creameries to sell milk (which might be pasteurised) to those desiring it, as is done by almost all. By this means the mothers have the option of buying good milk at a reasonable rate when they live near a creamery, but difficulty is experienced when they live a considerable distance from one.

Milk, though the chief food for infants, is not the only one.

Many patent foods are sold. Some of these are excellent in their way, but some are dangerous. Many, for instance, which are stated to be suitable for infants from birth are found to contain, when prepared according to the directions for use, a large proportion of unaltered starch. Infants cannot digest starch earlier than the sixth month as a rule; it is wrong, therefore, to permit the sale of such foods. They both imperil the child's life and waste the mother's money.

Legislation which tends Directly or Indirectly towards Infant, Child, and Maternal Welfare.

Foundling Hospitals.

Legislation has not, till very lately, had much concern about the welfare of infants in these countries. So long as there was nothing which could be considered as actual cruelty or gross neglect the mother was left to her own resources and allowed to feed and look after her infant as she liked, without education and without guidance. Neither the State nor city offered her help in her oft-times very unequal struggle against adverse circumstances. But the 17th and 18th century, in Europe generally, saw the advent, or at least the development, of those institutions known as foundling hospitals. The first Act in Ireland, the intention of which was to benefit the condition of a certain class of infants, was 2 Anne c. 19, 1703, by which the Dublin Foundling Hospital was established. This was a huge baby-finding, baby farming (and baby killing) institution, the professed objects of which were to prevent the exposure, death and actual murder of illegitimate children.

The deaths of infants, however, on their way to the hospital, while there, and when out at nurse, were so frequent that many investigations were made. A Committee of the Irish House of Commons inquired into the matter and the startling revelation was made that out of 12,786 children admitted in the six years ended 24th June, 1796, 9,804 had died and 2,847 were "unaccounted for," and if we are to conclude that 135 children were all that survived, the result of the system was a miserable failure.

A similar institution with similar objects and aims was established in Cork under the Act 9 George II. c. 25. No statistics of the Cork Foundling Hospital are available, but there is no ground for supposing that its management or results were much better than those of the Dublin institution.

The whole system, moral, spiritual and material, of the complete separation of parent and child, and the frequent forcible education of the latter in a different faith from that of the parent, was so wrong that one is not surprised at its utter failure.

The Act 11 and 12 George III. c. 15, and the Amending Act 13 and 14 George III. c. 24, 1774, taken together, made provision for the support of exposed and deserted children of tender age in every parish in Ireland by means of a compulsory assessment upon the inhabitants.

The Poor Relief (Ireland) Act, 1838.

This was the first general measure for the relief of the poor in Ireland, and followed fairly closely the lines of the similar English Act. It provided, among other things, for a great reduction in the number of infants in Foundling Hospitals, and ultimately these establishments ceased to exist. The only provision for the relief of destitute children was in the ordinary workhouse with the other inmates. Special provision was made however, by the Poor Relief (Ireland) Act, 1862, by which the Guardians might board out any orphan or deserted infant.

The Medical Charities Act, 1851.

This Act by which the system of free medical treatment of the poor was established, has already been referred to.

Children Act, 1908.—Part I.

Infant Life Protection.

Every person who undertakes for reward the care and maintenance of an infant under seven years of age apart from its parents must, within forty-eight hours from the reception of such infant, give notice in writing to the local authority, that is, the Board of Guardians. Notice of change of address must also be given within forty-eight hours.

If an infant dies or is removed from the care of the person who has undertaken its nursing and maintenance, notice must be given within forty-eight hours. In case of removal, the name and address of the person to whose care the infant has been transferred must be given.

Persons failing to give notice may be fined or imprisoned, and those who have received a lump sum for the care of the infant may also be called upon to forfeit it. It is the duty of the Guardians to provide for the execution of Part I. of the Act, and to inquire whether there are any persons having infants for reward within their district.

Where there are such infants for reward in the district, the Guardians are required to appoint one or more persons of either sex as infant protection visitors, whose duty it shall be from time to time to visit the infants and the premises in which they are kept, in order to satisfy themselves as to the proper nursing and maintenance. A magistrate's warrant may be obtained for admission to a house in which there are reasons to believe that the Act is being contravened.

Persons who have not given satisfaction or whose premises have been found to be insanitary, or who have been convicted of cruelty to children, are prohibited from receiving children without the written sanction of the Guardians. If the premises in which the infant is kept are overcrowded, dangerous, or insanitary, or if the person who has care of the infant by reason of negligence, ignorance, inebriety, immorality, criminal conduct, or other similar cause is unfit to have care of it, the visitor or authorised person may apply to a justice or to the local authority for an order for its removal to a place of safety.

A person having care of an infant is required to give notice to the coroner within 24 hours of its death.

The above are the principal provisions of the Act, and it is curious to note that no obligation has been imposed upon any central authority to see to their enforcement. The result is that in many districts in Ireland the Act is a dead letter.

Under the Infant Life Protection Act of 1872 (35 and 36 Victoria, c. 38), infants when maintained apart from their

parents could only be received or retained in a house which had been registered by the local authority who were required to register the house free of charge. The local authority were required to supply the prospective foster-parent with a register in which he had to record full particulars regarding the infants. This Act was repealed by the Infant Life Protection Act, 1897 (60 & 61 Victoria, c. 57), which with slight changes is now incorporated in the Children Act of 1908. It is not apparent why the procedure of requiring the home to be registered before the reception of the infant was changed, possibly it may have been thought that the procedure pressed too hardly on unmarried mothers in their endeavour to procure a home for their children at small expense. The fact that registration is not insisted on beforehand is, in the opinion of the Inspectors employed by local authorities in Ireland, one of the greatest defects in the Act. It is found in practice that a child may be boarded out with persons unfitted to have the care of children, or in unsuitable premises, and that no remedy can be applied. The Inspector has no power to force the parent to remove the child to a more suitable foster home, his power being limited to removal of the infant to the workhouse, thereby often relieving the parent of the cost of its maintenance.

The Board of Guardians under the Pauper Children Acts have to approve of both the foster parents and their houses before they can board out deserted or orphan children. It appears more desirable and even more necessary that a similar procedure should be followed in the case of children boarded out under the Children Act. It also appears to be a defect of the latter Act that infants should be allowed to be adopted by a foster parent for payment of a lump sum of money, seeing that the Act makes it illegal to insure the lives of such infants. It might be supposed that the same reasons which called for this prohibition would apply with equal force to the payment of a lump sum of money to a foster parent.

As the Children Act applies to the United Kingdom it might be thought that any defects in it should apply equally to England, Scotland, and Ireland. Such may not, however, be

the case as there are other Acts in England and Scotland bearing on the care and maintenance of infants of unmarried mothers.

In Ireland, an unmarried mother cannot make the father of her child liable for its maintenance without going into the workhouse, in which case the Guardians can take proceedings against the putative father for the cost of maintaining the child. The Guardians, however, for many reasons are rather averse to taking such proceedings. In England, the Bastardy Law is quite different in these respects. The Viceregal Commission on Poor Law Reform in Ireland (1906) took evidence on the subject of the assimilation of the law in the two countries.

The Commission state that:—

"In order to compel fathers to contribute to the support of their children a great many witnesses recommended that the Bastardy Law of Ireland should be assimilated to that of England, and that mothers might accordingly be enabled to take proceedings at law in their own name. We do not see any objection to such a change in the law, but we do not like to make any direct recommendation in favour of it, as we feel that there may be considerations in opposition to such a proposal, though we are not aware of them. We merely refer to the evidence we have received, and state that as far as we can see, the object of the witnesses in endeavouring to enforce payment from the father is one that altogether meets with our approval."

The application to Ireland of proceedings for affiliation orders as recommended by the Viceregal Commission has also been endorsed by the Royal Commission on the Poor Laws and Relief of Distress.

In any amendment of the Act it appears desirable that the Guardians should have power to decide whether a person was fit and proper to take care of an infant, or infants, before being allowed to undertake such a charge, and that the proposed foster home was in every respect satisfactory, a register being kept by the Guardians of suitable foster parents which should be open at all reasonable times for inspection by anyone seeking for the name and address of a foster mother.

The Guardians should have power to direct their Inspector or other officer to remove an infant from undesirable surroundings by passing a resolution without the cumbersome proof set out in Section 5 (*a*), (*b*), (*c*) of the Act. The obtaining of a magistrate's order under existing conditions is beset with difficulties.

In many cases the child is actually boarded out by intermediaries, *i.e.*, societies or persons who take it over from the mother and transfer it to the foster parent. There are two classes of intermediaries—first, philanthropic societies which aim at rescue work; and second, women who make profit out of the transaction.

The whole practice of early separation of the mother from the child is wrong, and the payment of a very small sum weekly to the foster parent, or of a small lump sum, makes it uneconomic to look after the child properly. Foster homes are often found in some of the poorest and most wretched slums. If possible, the best plan would be to keep the mother and child together, either in some institution or boarded out, for at least three months, after which the child might be separately boarded out. This would allow of breast feeding, and carry the infant over the most critical period of its existence.

Prevention of Cruelty to Children Act, 1904.

This Act makes provision for the punishment of those ill-treating or neglecting the children under their care, and for the removal to a place of safety (usually a workhouse) of children found ill-treated, or begging in the streets. The powers conferred by the Act were largely extended by the Children Act, 1908, Part II.

Pauper Children Acts.

Under Section 9 of the Poor Relief (Ireland) Act, 1862, the Guardians were for the first time authorised to provide for the relief of orphan and deserted children out of the workhouse. The powers of the Guardians were extended by the Pauper Children Acts of 1898 and 1902. Under the powers conferred

by these Acts, the Guardians board out such children in the houses of respectable people and pay a weekly sum for their maintenance. The homes in which the children are to be boarded out are previously inspected by officers of the Guardians. The Local Government Board have appointed two Lady Inspectors, whose duty it is to confer with the Guardians and the Ladies' Committee appointed by them as to the arrangements for the boarding out of children, and also the inspection of the children and the homes in which they are boarded out.

The total number of "orphan or deserted" children so placed out was 2,495 at the end of March, 1916. It is to be regretted, however, that at the same date 3,769 children were still inmates of workhouses, but only a small proportion of these were orphan or deserted, and the others were not eligible for boarding out.

The Royal Commission on the Poor Laws and Relief of Distress have strongly recommended that "the maintenance of children in the workhouse should no longer be recognised as a legitimate way of dealing with them." The Viceregal Commission on Poor Law Reform in Ireland have placed on record their opinion that boarding out is by far the best and also the cheapest mode of rearing workhouse children. They considered that it was of the greatest importance that the children should be placed out at an early age. Experience has shown that if reared in the workhouse they return there in after life, whereas if boarded out they become merged in the general population.

The reports received from the Local Government Board Inspectors show that the foster parents are generally kind, and that the children become part of the household. Some of these homes may be poor, but, as pointed out by the Viceregal Commission "a home would have to be really bad and not merely faulty to make it inferior to what would be considered a well-managed, effective institution."

Maternity Benefit.

Under the National Insurance Act, 1913, Section 14 (1), Maternity Benefit became the mother's benefit, and where the

benefit is payable in respect of the husband's insurance, the wife's receipt, or, if authorised by her, the husband's receipt on her behalf, is held to be a sufficient discharge of the Society or Committee

It is further provided that when the benefit is paid to the husband he shall pay it to the wife, and that it shall be administered in the interest of the mother and child, in cash or otherwise, by the Approved Society of which the husband is a member.

Under the 1911 Act, where a married woman was herself an insured person, in addition to the Maternity Benefit payable in respect of her husband's insurance, she was entitled to Sickness or Disablement Benefit in respect of her confinement. The 1913 Act took away this right to Sickness Benefit in respect of confinement, and substituted a Maternity Benefit payable by her own society, in addition to the Maternity Benefit to which she would otherwise be entitled in respect of her husband's insurance. Where a woman is the wife of a person who is not insured, but is herself an insured person, she is entitled to a second maternity benefit as well as to the ordinary Maternity Benefit from her own insurance. Societies were, however, required to make rules requiring members to whom this second maternity benefit was payable to abstain from remunerative work during a period of four weeks after confinement, and members can be dealt with and fined for breach of this rule.

This is now known as the Second Maternity Benefit.

Under the principal Act, cases frequently occurred where, even when the woman was herself an insured person and in full benefit, no Maternity Benefit was payable from her husband's insurance, by reason of his either having an insufficient number of contributions to his credit, or on account of arrears. Under the 1913 Act, special provisions were introduced, the result of which is, in such cases, that the woman becomes entitled on her confinement to receive, in respect of her own insurance, such sum as she would have been entitled to receive if her husband had not been an insured person. The Second Maternity Benefit is, of course, also payable in these cases. It will

be seen, therefore, that since the passing of the 1913 Act, Maternity Benefit has become distinctly more valuable, from the woman's point of view.

Approved Societies are empowered to administer Maternity Benefit in cash or otherwise, and accordingly it is open to them, in the interests of the mother and child, to provide the services of a trained midwife as part of the Maternity Benefit. Except in Dublin, where agreements have been made between certain societies and the Rotunda, Coombe, and National Maternity Hospitals, by which a uniform charge of five shillings, both for intern and extern patients, which is to cover the cost of certificates, is made in respect of their members, and which is paid out of the Maternity Benefit, Approved Societies generally have not done anything in this direction. Owing to the absence of the Midwives Act in Ireland, although every encouragement has been given to attendance by trained midwives, it has not been found possible to insist on this point.

In 1914, Maternity Benefit was paid in respect of 47,961 mothers, and in 1915 of 44,318. In other words almost one-half of the births of this country come under the purview of this enactment. The sums paid in respect of these births were £83,413 in 1914, and £75,937 in 1915.

Attendance at a Maternity Centre might be made a condition of payment of Maternity Benefit, and in localities where there is no Maternity Centre a request sent to the Health Visitor to call would serve the same purpose. An arrangement of this kind would probably lead to securing that the women of the industrial classes, who form possibly the most important portion of those whom these centres are designed to reach, would be brought under the notice of the Medical Officers connected with the Maternity Scheme in the district. This would, as far as the insured women or the wives of insured persons are concerned, have the same effect as notification of pregnancy, but would be less objectionable. It could also be arranged that Maternity Benefit would be paid on the certificate of the Health Visitor which might be given free.

Children of School-Going Age.

It cannot be denied that those authorities which have the power to exercise a watchful care over the infants and young children in this country are frequently slow to exercise it, and in many cases, either through ignorance or indifference, are altogether averse to doing their duty. It is also unfortunate in Ireland that there is no system of medical inspection of school children as there is in England. No one can deny the immense good that such inspection does, both for the child at the time and for his, or her future welfare. Periodic inspection reveals such defects as carious teeth, enlarged tonsils, adenoids, ringworm, rickets, early tuberculosis, eye diseases, &c., which, when detected early, may be remedied or at least alleviated, but which if left uncared for are liable to become much more serious and to detract from the child's future usefulness or even imperil his life.

The following table shows that Ireland, whose infantile death-rate is lower than that of England, loses this advantage in the school-going period.

Table J.—Comparison of Death-Rates in England and Ireland for the Age Periods during which Children attend School.

Deaths per 100,000 (1901–1910)		
Age Period	England	Ireland
5–10	357	393
10–15	211	310

This table shows the steady increase in the children's death-rate in Ireland as compared with England, and makes evident the necessity of having a system of medical inspection of school children.

EDUCATION (PROVISION OF MEALS) (IRELAND) ACT, 1914.

By this Act, which applies to Ireland alone, a local authority may take the necessary steps for the provision of meals for children in attendance at any national school in their area, and for this purpose may associate with themselves a "school meals committee," which will undertake to provide food for these children; and may aid that committee by furnishing the necessary building, furniture, apparatus and officers or servants. The parents of the children shall be charged with the cost of the meals furnished unless they are unable to pay the amount. "Where the local authority resolve that any of the children attending a national school within their area are unable by reason of lack of food to take full advantage of the education provided for them, and have ascertained that funds other than public funds are not available or are insufficient in amount to defray the cost of food furnished in meals under this Act, they may apply to the Local Government Board for Ireland, and that Board may authorise them to spend out of the rates such sum as will meet the cost of the provision of such food, provided that the total amount expended by a local authority for the purpose of this section in any local financial year shall not exceed the amount which would be produced by a rate of one halfpenny in the pound over the area of the authority."

A local authority is defined as "an urban district council, including a county borough council," so the Act does not apply to the rural districts, including the villages and small towns.

The Act was to continue in operation till the 31st December, 1916, but by an Amending Act of 1916 this section was repealed and the local authorities were empowered to spend an amount up to the equivalent of one penny in the pound rate over their area.

The Act has been put in force in the following urban districts:—Athy, Bray, Cavan, Cork, Dublin, Killarney, Kilkenny, Kingstown, Listowel, Newry, Wexford.

The United Irishwomen have had a scheme in force for some time for the supplying of cocoa to school children in some of

the poor rural districts. A charge of ½d. or 1d. a week is made for each child, and a cup of hot cocoa is supplied at mid-day. The scheme involves the co-operation of the teachers, but help has always been given by them ungrudgingly. The benefit to the children, a number of whom are very young and who, in many instances, have to travel long distances to school, both as regards their health and education, is very marked. In nearly every case the scheme has been self-supporting, but it is to be regretted that the extension of the scheme, which works with such beneficial results, is hampered by want of funds. Many of the children leave home with only a scanty breakfast, and if funds were available a more substantial meal could be provided.

Now let us compare these inadequate provisions with the power of the Education Authorities in England, and the assistance of the State in paying half the cost of the feeding of school children in that country. At the time Parliament passed the Education (Provision of Meals) (Ireland) Act, 1914, and limited its operations to the urban districts and county boroughs, also limiting the expenditure from the local rates to one halfpenny in the pound without any grant from the Treasury, there were arrangements in England—Education (Provision of Meals) Acts, 1906 and 1914—to enable the Local Education Authorities to provide meals for school children, half the cost of which was borne by the local rates and the other half by the Treasury. If it is necessary in England for the State with Government funds to help to feed the school children, surely it is more necessary in Ireland where the rate of wages is much below what it is in England and where a larger proportion of the children are underfed.

The Chief Medical Officer of the Board of Education in England, Sir George Newman, M.D., in his annual report for 1915, states :—

" The findings of medical inspection indicate that, on the average, 10 per cent. of the children attending public elementary schools suffer from malnutrition, much of which is due to

insufficient or unsuitable food. The remedy is to feed the child. From whatever point of view we consider this question, one broad fact always emerges. If the child is to grow and become strong it must be fed, and the criterion of its need to be fed is its own physical condition, and not the social position or poverty of its parents. It is important that the parents should be responsible, but it is more important that the child itself should be fed. Questions of ways and means must, of course, be carefully considered, but it is not a sound or wise policy for an Authority to spend months or years debating the subject and meanwhile postpone arrangements for getting the child fed, with the inevitable result that malnutrition and its results remain."

The following table summarises the chief facts in connection with this service for the years ending 31st March, 1914, 1915 and 1916:—

TABLE K.—PARTICULARS OF DAILY FREE MEALS SUPPLIED TO CHILDREN IN PUBLIC ELEMENTARY SCHOOLS IN ENGLAND AND WALES, UNDER THE EDUCATION (PROVISION OF MEALS) ACTS, 1906 AND 1914, BY LOCAL EDUCATION AUTHORITIES (L. E. As.).

Year	No. of Children Fed	No. of Meals supplied	Average No. of Meals supplied per Child Fed	Average Total Cost per Meal	Average Cost per Meal for Food only	Expenditure of L.E.As.	No. of L.E.As. which recd. Grant	Amount of Grant
				d.	d.	£ s. d.		£ s. d.
1913–14	156,531	14,525,593	93	2.43	1.16	142,857 6 3	97	71,383 1 11
1914–15	422,401	29,560,316	70	2.47	1.51	298,237 11 4	136	148,753 19 7
1915–16	117,863	9,914,095	84	4.13	2.29	159,916 7 9	(Grants in process of payment)	

"The cause of the rapid decline in the number of children fed in 1915-16 was due to the payment of Separation Allowances, and to the current high wages." It will be seen that the amount of the Government grant was £148,753 19s. 7d. for 1914-15, the last year for which particulars are given.

In addition to the foregoing, there is in England a School Medical Service which includes salaries of Medical Officers,

Specialists and Nurses, and their travelling expenses, drugs, appliances, &c., contributions to external hospitals, infirmaries, nursing associations, &c. The Government grant towards the cost of this service for the year ended 31st March, 1915, was £192,414. This, together with the Government grant for feeding school children, amounted to over £340,000 for 1914-15.

So far as I know, no similar Government grants have been made to Ireland in lieu of or since those mentioned were given in England.

These grants are included in the Education Vote, but the amounts to be expended on both the provision of meals and the medical inspection of school children do not appear to be limited, whereas the grants in aid of the Public Health and Medical Service in Ireland are limited, and cannot exceed the amount fixed many years ago.

The Congested Districts Board.

I must mention the work of the Congested Districts Board, which, by improving the general condition of the people in the poorer parts of Ireland, has, indirectly, had considerable effect on the welfare of infants and children.

This Board was first constituted twenty-five years ago under the provisions of the Land Purchase (Ireland) Act, 1891. The Board was authorised to take such steps as it might think proper for the benefit of the very large congested area in the entire western portion of Ireland. A "congested district" is one of low valuation per head of the population rather than a densely populated area. The Board was reconstituted in 1909, and its area, powers, and revenue largely increased.

The districts now scheduled as congested comprise the whole of the Counties of Donegal, Leitrim, Sligo, Roscommon, Mayo, Galway, Kerry and parts of Clare and West Cork. The area is more than one-third and the population about one-fourth of all Ireland, or excluding the cities and towns, the population is one-third of the entire rural population of the country. The valuation, however, is only about one-sixth.

The Board aim at the social uplifting of the inhabitants—

not by the pauperising influence of free doles of money—but by affording them the means of earning a subsistence for themselves and their families. The operations of the Board are multifarious. They provide larger farms or holdings for the people by purchasing untenanted lands; improve communications by roads or otherwise; carry out drainage works; construct piers or landing places; establish or develop sea-fisheries; create or assist industries; and in other ways improve local conditions; for instance, assistance is given to Lady Dudley's scheme for supplying nurses to poor and backward districts, and guarantees are given for telegraphic and postal extensions.

The important function of the Board is to assist in the improvement of the dwellings of the inhabitants. Sixty years ago, and for a long time afterwards, the majority of the inhabitants of the western portion of Ireland were housed in one-roomed hovels, frequently built of sods and mud, without windows or chimneys, and their dietary consisted mainly of potatoes or meal with water, or a scanty supply of milk in the summer months. Up to the present over 8,000 dwellings have, by one means or another, been either newly-built or substantially improved. A number of home industries, such as knitting, lace-making, embroidery, weaving, have been introduced, and in some districts practical local instruction is given in household management, cooking, and laundry work.

Since the establishment of the Board the condition of the inhabitants of the congested districts has undergone a very great change for the better. The general reduction of rents and the establishment of security of land tenure; the influence of education, both literary and technical; the opening up and completion of communication by road, water and rail; the administration of the Public Health Acts by the Local Government Board and local bodies, aided by the exertions of voluntary associations, have all contributed to this end. The universal raising of the standard of living as regards food, clothing and habits must not be forgotten, though its influence in the backwater of remote congested districts is far less than in localities that are more in the stream and current of advancement.

Through the operations of the Congested Districts Board there has been a very great increase in the number of milch cows, so that children get far more milk than in old times. Tenants have larger farms and so can feed more cattle, and the Board lend money for the purchase of cattle to tenant purchasers with substantially increased holdings. Besides, cattle are largely purchased out of money saved from earnings in sea-fishing and in other industries.

The improvement in the condition of the people in the congested districts has, no doubt, effected a great reduction in the infant mortality in this part of the country. It is impossible, however, to furnish any complete statistics on the point. Although the Registration of Births and Deaths Act passed in 1863, the registration for many years subsequently was notoriously defective. Furthermore, alterations have taken place from time to time in the boundaries of Unions and Registrars' Districts. Taking, however, thirty-two of the principal Unions in the congested areas where conditions have been stable, I arrive at the following results :—

——	Average, 1891–1900	Average, 1901–1910	Average, 1911–1915
Infant mortality per 1,000 births in the 32 Unions . . .	75.9	66.1	60.9
Infant mortality per 1,000 births in the other rural parts of Ireland	82.3	74.9	69.9
Difference . . .	6.4	8.8	9.0

It may be mentioned that the thirty-two Unions referred to above comprise a valuation of £1,375,232 out of a total valuation of £2,371,914, for the entire congested area. I have not taken the decade 1881-90—the one immediately preceding the formation of the Congested Districts Board—as it contained three periods of acute distress in the west of Ireland, viz., 1882-3, 1886 and 1890.

It will be seen by the above table that, while there has been a steady decrease in infant mortality in both areas during the period under review, the decrease has been relatively more marked in the thirty-two Congested Unions than in the other rural parts of Ireland.

I cannot, of course, say that the work of the Board is responsible for this great improvement, but, without doubt, it has been a considerable factor.

Recreation Grounds and Open Spaces.

Local Authorities are enabled by various enactments to provide pleasure grounds and places of public resort and recreation. These powers have been used in some of the cities and larger towns, but many of the small towns are as yet without any such provision. (See Appendix, Tables XX. and XXI., pages 208 and 212.) These "lungs," in which babies and older children can get the fresh air they require, have a very beneficial effect on the young. Such recreation grounds and open spaces should be provided where they would be easily accessible from the working-class districts. Covered play-centres might also be provided, where gymnastic instruction might be given to children.

Notification of Births Act, 1907.

By this Act notification of births within 36 hours to the local sanitary authorities was made compulsory if it were adopted by them. In Ireland it was only adopted by the Dublin and Belfast County Borough Councils. The extension Act of 1915 made notification of births compulsory in all Urban Districts in Ireland.

In Dublin in 1915, 91.4 per cent. of the births registered were notified to the sanitary authority, and in Belfast, for the same year, the percentage was 89.7.

Maternity and Child Welfare Schemes.

In June, 1916, the Local Government Board sent out a circular letter to each urban authority advising the establish-

ment of Maternity and Child Welfare Schemes, and pointing out that one-half of the approved expenses of such a scheme, whether managed by the local authority or by some voluntary agency would be defrayed by the Treasury. (See Appendix, page 155.)

The only local authorities which had done anything to lessen the infant mortality in their areas, before the grant-in-aid of infant welfare schemes was available, were those of Dublin, Belfast and Newry. Since the grant has become available a number of authorities have submitted schemes to the Local Government Board which have been approved, and are now in working order (see Appendix, Table XIX, page 207). Many other authorities have schemes in the course of preparation.

There are also a number of voluntary societies and organisations doing different kinds of work, all having as their aim the welfare of infants. Some of these confine their attention more or less strictly to Dublin, Belfast or Cork, and these will be dealt with separately by three lady doctors who have been intimately associated with Maternity and Infant Welfare work in each of the three cities.

I will now briefly survey what is being done through the country.

Baby Clubs.

The branches of the Women's National Health Association have opened Babies' Clubs in the following places (in addition to those in Dublin and Belfast)—Limerick, Kingstown, Blackrock, Dundrum, Bray, Carrick-on-Suir, Coleraine, Naas. Some of these have employed a full-time Nurse and some the part-time services of a Nurse. At some a doctor attends fortnightly or monthly (usually giving his services voluntarily). Health lectures, classes in cookery, and in sewing and mending are held. At most of them milk and other food is sold.

Milk Depots.

The Women's National Health Association, or rather its branches, have opened milk depots in various towns and villages

where milk was scarce—Naas, Kill (Co. Kildare), Limerick, Killorglin, Carlow. These depots are, for the most part, self-supporting, the milk being sold at the current price. Even to obtain good fresh milk at all in some of these towns is a very great benefit.

In Naas, the Society of St. Vincent de Paul and the Women's National Health Association issue books of milk tickets for distribution to the poor. Each ticket entitles the holder to one pint of milk.

In Carlow there is a special scheme by which, in the winter months, fifty of the poorest families with young children receive a quart of milk daily at the price of one penny a quart. The expenses of this scheme are defrayed by subscriptions.

The United Irishwomen have also established milk depots in eleven districts where there was a scarcity of milk, including Abbeyleix, Borris, Bruff (Co. Limerick), Ballyragget (Co. Kilkenny), Kilmallock, Newcastle West and Omagh. At these also the milk is sold at current prices, but the buyers may be sure that it is good fresh milk. In 1915, more than 43 thousand gallons of milk were sold in these depots.

The difficulty with regard to the supply has always been in securing a contract to last over the winter months when milk is difficult to obtain. During the summer months there is not the same scarcity, and the customers are tempted to take their supply from the nearest source and desert the depots.

In Limerick there is a milk charity in connection with the Bedford Row Maternity Hospital. Here the system is for the Matron to distribute tickets weekly to the applicants (all of whom she knows) who have been under the care of the Hospital. By means of these tickets the milk is sold at 6d. per gallon to the very poor mothers. Over twelve thousand gallons of milk are sold each year.

The sanitary authorities could establish milk depots for the sale of milk for expectant and nursing mothers and young children, under the powers conferred on them by the Notification of Births (Extension) Act, 1915, in both urban and rural districts where there is difficulty in obtaining milk. Such a

milk depot has been established by the Urban Council of Newry with satisfactory results.

Nursing of the Sick Poor in their Homes.

The Queen Victoria Jubilee Institute for Nurses.

The Queen Victoria Jubilee Institute for Nurses was established to provide trained nurses for the sick poor in their own homes. The Institute has two training homes in Dublin. These serve the double purpose of enabling the nurses to gain experience, under supervision, of district work, and of making provision for the nursing of the sick poor in the Dublin area. About twenty-four nurses a year are admitted for training, and after a six months' course are drafted to the different parts of Ireland in which their work is to be carried on.

Local Committees have been formed to raise the necessary funds for the establishment of the nurses throughout the country and have achieved a large measure of success. Affiliated associations have been founded, and organisations like the Lady Dudley Nursing Scheme and the Women's National Health Association have given material assistance in the development of the movement. The latest returns show that there are now 136 affiliated associations, and the number of Queen's nurses has reached 174.

The qualifications of the nurses are as follows:—

(*a*) Training at approved hospitals for not less than three years, to include at least two years in an approved hospital (General).

(*b*) Approved training in district nursing for not less than six months, including maternity nursing and a course of theoretical instruction followed by a simple examination in the practical work of a district nurse.

(*c*) Nurses to be employed in midwifery must, in addition, receive the training required by the Central Midwives' Board, or in Ireland such equivalent training.

At the completion of the six months' district training there is an examination for the Queen's Roll.

The nurses throughout the country serve, on an average, an

area of from three to four miles in radius, except in thinly populated districts where larger areas have necessarily to be taken in. General nursing is undertaken in all districts, but in addition to this there are forty-two nurses with midwifery training, and most of these are practising within their areas. In the towns where a full-time Tuberculosis Nurse is not employed, the Queen's Nurses give part-time services if required, which entails attendance on the Tuberculosis Officer, and the domiciliary visiting of tuberculous patients, but the nursing of these cases would, in the ordinary course, be undertaken in their routine work.

The services of the nurses are gladly availed of by the sick poor, and the benefits conferred by them on the mother in her labour, and on the infant, can hardly be over-estimated. Not only do they tend the sick, but also they advise the mothers about the care and feeding of their infants and children.

Lady Dudley's Nursing Scheme.

The Lady Dudley Nursing Scheme was established in 1903 by Lady Dudley for the purpose of providing and maintaining nurses in the poorest parts of Ireland, the "poorest parts" being taken to mean those scheduled as "congested" and having a population of 2,000 and upwards.

The scheme was started with the establishment of three nurses, but it now maintains twenty-one nurses; five in County Donegal, six in County Galway, five in County Mayo, one in County Cork, two in County Kerry, one in County Roscommon, and one in County Sligo.

Each nurse is a member of the Queen Victoria Jubilee Institute and is fully trained in surgical and medical nursing and in midwifery. They attend all cases except patients suffering from typhus fever.

With regard to maternity work, the nurses attend each patient for nine days, and for such further period as may be necessary. They have been directed, during the time they attend such patients, to give the mothers as much instruction as possible with regard to the care of themselves and their infants, and the result of their labours is evident if the cases of women who

are accustomed to call in the nurse are compared with the cases of those who have not done so. In one district particularly a great improvement is distinctly to be noticed, and the breast-feeding of infants has been insisted upon as far as possible, with the result that the nurse's constant advice to mothers leads them almost invariably to breast feed their infants.

The nurses have also been directed to pay special attention to the cases of children's diseases, and in places where an epidemic of measles or diphtheria has broken out the committee have instructed the nurse to devote her whole time to the care of such cases, thus, doubtless, saving the lives of some, and lessening the consequences and ill effects upon the constitutions of many of those affected, as well as preventing the spread of the disease.

In addition to the drugs necessary for their work, the nurses are supplied with nourishment for mothers and infants in really necessitous cases.

The total number of cases attended by the nurses working under the Scheme from 1912 to 1915 inclusive is as follows:—

1912			1913			1914			1915		
Med.	Surg.	Mat.	Med.	Surg.	Mat.	Med.	Surg.	Mat.	Med.	Surg.	Mat.
1161	1337	445	994	1511	447	1276	1408	488	1353	1314	459

These nurses are inspected twice a year by the inspectors of the Queen Victoria Jubilee Institute, who are themselves thoroughly experienced in the conditions and possibilities of the districts in which the nurses are at work, and thus the standard of work is maintained, and the nurses receive encouragement and professional advice in many cases of difficulty.

In addition to the vast amount of useful work performed by the Nurses in attending mothers and children, and alleviating all kinds of human suffering, their educative influence cannot be over-estimated; their insistence on the personal cleanliness

of the patients while under their care, and the cleanliness of all the vessels and materials used in connection with their work; their suggestions as to minor, but important, improvements in the condition of the houses, such as open windows, &c., the simple instruction they give to patients and their friends regarding hygienic conditions; and their personal example: all tend to exercise a powerful influence on the people of the districts in which they are stationed.

Women's National Health Association.

The Women's National Health Association encourages the employment of district nurses. The Central Branch is affiliated to the Queen Victoria Jubilee Institute.

Thirty Queen's Nurses are employed by the various branches of the Association in the following districts:—Blackrock, Ballyshannon, Bray, Carlow, Carrick-on-Shannon, Cashel, Castlecomer, Coleraine, Dublin County Borough, Enfield, Enniscorthy, Howth, Kells, Killeshandra, Killorglin, Listowel, Longford, Mid-Antrim (Ballymena), Milltown and Dundrum, Monasterevan, Mullingar, Naas, Navan, Nenagh, Pembroke, Portarlington, Rathmines and Rathgar, Tipperary, Tralee, Trim.

The work, books and appliances of every affiliated association are inspected twice a year on behalf of the Queen Victoria Jubilee Institute.

United Irishwomen.

Under the United Irishwomen village nurse midwives are employed. They must:—

(*a*) be certified under the Midwives Act, Central Midwives' Board certificate included, and shall have twelve months', but in no case less than nine months', district and midwifery training, or

(*b*) have approved hospital training to be followed by not less than three months' district training.

The Queen's Institute will only sanction the employment of village nurses:—

(*a*) in a rural district where it is impossible to support a Queen's Nurse.

(*b*) in a district where a Queen's Nurse is already employed, and where special conditions make it desirable that a village nurse should be employed under her direction.

By this scheme twelve village nurse midwives are employed in rural districts, where there are no trained midwives or where the dispensary district is so large that it is impossible for the midwife to attend to all the cases. Their function is chiefly that of midwife, but their training in first aid work and general nursing makes them very useful in all cases of sickness and injury. Their services are much appreciated, and they have done a very considerable amount of good work in their districts.

In addition to the voluntary organisations directly connected with Maternal and Child Welfare work, there are a large number of orphanages and homes for young children, where orphans and deserted infants and children are received. I have not thought it necessary to include particulars of these institutions as they are chiefly connected with religious bodies, and are not likely to be included in schemes for Child Welfare. They are, however, doing a noble work and deserve the hearty support of the charitable public.

There are several Homes for Cripple children supported by endowments and voluntary subscriptions; arrangements might be made with these institutions to include them in any comprehensive scheme for Child Welfare.

I have already mentioned the Union Infirmaries where the sick poor have a right to free medical and surgical treatment, but these institutions should be separated from the Workhouse administration and placed under the control of County Committees so as to dissociate them in the public mind from any suspicion of pauperism, and thereby enlarge considerably their sphere of utility. There are also County Infirmaries supported for the most part from the county rates, where poor mothers and children are entitled to free medical and surgical treatment. There is one of these institutions in every county in Ireland, usually situated in the county town.

Education.

The programme of instruction in the National Schools for 1915-16 includes education in such subjects as hygiene, cooking, laundry and simple physiology.

"Cookery and laundry work form part of the ordinary school programme for girls enrolled in the fifth and higher standards when suitable provision for instruction in these subjects has been secured. . . . Girls enrolled in a lower standard than the fifth, who have reached the age of eleven years at the beginning of the school year, should, as a rule, attend the classes in cookery and laundry work."

"Lessons in hygiene, including temperance, should be given regularly in all schools."

"The subjects should be taught practically in connection with the everyday life of the pupils."

In the course relating to hygiene, health and habits, the children receive instruction in regard to other things—food values, simple physiology, respiration, digestion, circulation, influence of germs in daily life, disease, decay, tuberculosis, temperance, ventilation, cleanliness, illness, treatment of minor ailments and accidents.

While these subjects are most useful and necessary and are bound to have a marked effect for good, not only in their homes but more especially when the children grow up and have homes of their own, it is to be hoped that the usefulness of these already useful courses may be increased by the addition of instruction to senior girls in the care and management of babies and young children.

It may be mentioned that the Department of Agriculture and Technical Instruction for Ireland have classes of instruction in hygiene, food values, and similar subjects, with special reference to the care of the health of mothers and children, and give a capitation grant in aid of such classes.

General Proposals.

Up to the present we have been considering the condition of Ireland as it exists to-day; we have seen the distribution of infant mortality in the country; the causes of it, as far as pos-

sible; and, to some extent, the means by which it can be decreased. We have noticed the enactments passed up to now for the preservation of infant and child life and the steps taken by local authorities and various societies and organisations to lessen the present unnecessarily high death-rate. Now we must go further and point out those things which we consider it necessary and advisable to do in order satisfactorily and efficiently to deal with this immense and important problem. We must pass from the realm of the existing and of facts to that of the potential and of hopes.

Let me once again plead the urgency of doing something. Never before have so many lives been lost; never before have lives been so valuable. The State has realised this, and, in the midst of the world's greatest and most costly war, has sanctioned local authorities to spend large sums each year on satisfactory schemes for the promotion of maternal, infant, and child welfare, and is prepared to contribute one-half of the cost of approved schemes. No branch of public health work can effect so much at moderate cost as that of maternity and infant welfare. Every mother, every infant and every child is of value to the country; we can no longer afford to waste their lives. It is not good enough to postpone the matter till the termination of the war; now is the time to begin this important work. It is the duty of all to do everything in their power to lessen the ravages of infantile diseases and ailments. Those who sit as representatives of the people on local boards and other bodies may do most, but each one can help.

I would first make some proposals which would, if adopted, have the effect of making the figures on which every consideration of the problem must be based, more valuable and reliable.

Firstly, I would recommend that the attention of all the medical practitioners in the country should be called to the question of the death certification of infants and children. At present, as I pointed out before, certificates are often exceedingly vague. I would urge on them the abandonment of such vague terms as "convulsions" and the substitution of some more definite cause for death. Where death seems to have been due

to nutritional causes, a note of the food of the child would be useful (*e.g.*, breast, cow's milk, &c.).

Secondly, in every case where no doctor has seen the child in its last illness, most minute and careful inquiries should be made as to the cause of death, either by the police or by a doctor, who should certify that he has examined the child after death, before the death is registered. In addition to this, much valuable information as to the cause of death, both immediate and remote, in these cases might be obtained. An increased frequency of inquests on the death of infants who have not been under the charge of a medical attendant or public hospital would be valuable as tending to make clear to all classes the importance attached to infant life.

Thirdly, my investigations, and those of others who have dwelt on the subject, would have been simplified and made more valuable if the Registrar-General for Ireland had published in his yearly returns the following information in addition to that heretofore contained in the reports :—

(*a*) Tables showing the mortality for each of the first four weeks of life and for the second and third months for each county, county borough, and principal town.[1]

(*b*) The detailed causes of infant deaths for each county and county borough.[2]

Similar information is supplied for England by the English Registrar-General.

Social Diseases.

It has been pointed out that syphilis and gonorrhœa are not common diseases in Ireland, but from their deadly effects on infants, and from their prevalence in Dublin, and to a lesser extent in Belfast and some of the large towns, I would urge the importance of the local authorities undertaking schemes for the diagnosis and treatment of venereal diseases now that the State pays 75 per cent. of the cost of such schemes, and more especially as there is reason to suppose that these diseases will become commoner in the country on the conclusion of the war.

[1] This information is given in the 1915 Report for the twenty-seven principal Town Districts combined.

[2] This information has been supplied to me by the Registrar-General, but is not published.

In my opinion, the two great factors behind the problem of infant mortality in this country are ignorance and poverty. Both are all too common, and both of great difficulty to eradicate. But I will first mention a means by which the prevailing ignorance could be lessened.

Teaching of New Subjects.

At present, in the national schools, hygiene is taught, and this teaching might be extended. A knowledge of how to make the best of the existing conditions, how to improve them, and how to prevent disease and death is of the highest importance to all. It is necessary for the children to read and write and do arithmetic, but after that the improvement of their home conditions is the one essential. Ever-increasing attention must be paid to these subjects which are taught at present. Every boy should be taught something of sanitation and drainage; every girl cooking, sewing and laundry work; and both should be taught to realise how closely allied is uncleanliness to disease.

Senior girls, either in the school or after leaving, by means of continuation classes, should be taught the care and management of infants and young children. How to feed them, bath them and dress them; their diseases and minor ailments, and what to do for them. By this means a girl who had finished with school, and had taken such a course, would be in a position to look after her husband's house when she married, and to bring up her children well and healthy, instead of entering into matrimony blind and ignorant, as so often happens under present conditions. Besides this, a mass of accurate and reliable information would diffuse itself through the country, and will eventually, though this will take a considerable time, overcome the present ignorance and the firmly-rooted evil traditions which have survived till the present time.

Economic Conditions.

The economic condition of the labourer, both agricultural and casual, in Ireland, has been referred to more than once. It is a self-evident fact that, taking into consideration his wages, it is almost impossible for such a man to support a wife and family. If he is a provident man he must see that marriage and a family will produce for him a condition of misery.

Not long ago a man who was out of employment, and who had a wife and children, applied for a position to drive a pony and trap at a wage of 15s. a week. The gentleman who had advertised for a man, asked him if he were married, and on his reply that he was and had a family, the gentleman said that he was sorry he could not give the position to the applicant, for 15s. was all he could give, and he would be ashamed to give what he knew was insufficient to support a wife and family in Dublin; and so the man, on account of his wife and family, was refused employment.

There were in Ireland, according to the 1911 Census, 776,000 men between the ages of twenty and forty-five. Of these, 253,000 were married and 514,000[1] unmarried. In other words, there are more than twice as many men of suitable age for marriage, unmarried as married. Little wonder, indeed, that the marriage and birth-rates are so low in Ireland. The labourer can manage to live fairly comfortably on his present wage, but a wife and children mean for him a constant fight against poverty and almost the certainty of insufficient food. To find some means out of this difficulty is not easy. The whole question of wages is complicated, and while a compulsory minimum wage[2] would be a step in the right direction, it would not differentiate between the man with a large family and the man without a family. Another way to meet the difficulty would be for the State to give assistance to the fathers of families, in proportion to the size of the family, for the purpose of having the children reared strong and healthy. This may seem a somewhat revolutionary proposal, but closer examination shows that the principle has already been recognised by the State in more ways than one.

(*a*) The State contributes to the maternity benefit of women who are either insured themselves or are the wives of insured persons. This is an acknowledgement by the State that maternity is worthy of some recompense, and that there is a debt due by the State to the individual who brings into the world children on whose existence the vitality of the State depends.

[1] In addition there were 9,000 widowers.

[2] This was written more than two months before the Prime Minister made his announcement regarding a minimum wage.

(*b*) An unmarried soldier is paid at the rate of 7s. a week. If married, however, his wife gets a separation allowance of 12s. 6d. a week and 7s. for the first child, 5s. for the second, 3s. 6d. for the third, and 3s. for every other child under fourteen years of age. The State only pays him 7s. a week as a soldier, but it recognises his parenthood and pays for him, as a father, over 4s. a week for each of his children.

(*c*) Besides this, the principle of the responsibility, and, therefore, rights of parents, is recognised in another way. In 1909 a deduction of £10 for each child under sixteen years of age from the amount of taxable income on incomes less than £500 a year for the purpose of income-tax assessment was allowed. In 1914 the amount of deduction was increased to £20 for each child, and the next year to £25. For 1916, £25 may be deducted per child by those whose incomes do not exceed £700 a year. Once the principle was acknowledged, the State has year by year increased the allowance. At the present rate of income-tax (2s. 3d. in the £ on earned incomes under £500 per annum and 2s. 6d. in the £ on earned incomes between £500 and £700) a deduction of £25 in the latter is equivalent to more than 1s. 2d. a week; or, in other words, the State virtually gives a bonus of more than 1s. 2d. a week for each child to those whose incomes do not exceed £700 a year, by no means a "starvation wage," and while, doubtless, the relief is welcome, it is by no means necessary in the majority of cases. The children will be no better fed in consequence, and if the tax had to be paid on the amount, they would be no worse. We have no figures showing for Ireland the amount claimed under this grant, but for the United Kingdom the allowances from taxable income amounted to £6,248,796 in 1913-14, and to £11,704,011 in 1914-15. As the allowance was only one of £10 in 1913-14, and £20 in 1914-15, it means that about 600,000 children received the equivalent of grants from the State. For 1915-16 the deduction is £25, and the maximum income on which deduction may be made has been raised from £500 to £700 a year, so, though the exact figures are not available, it is certain that the State is omitting to collect, which is equivalent to paying away, considerably more than two million pounds on account of children

under sixteen years of age, whose parents are not poor, and who are neither badly fed nor badly clothed.

Each year the scheme has been extending in an upward direction, but now the time seems to have come to extend it downwards also, down below the income-tax paying class, to those who are most urgently in need of help, and to whom every shilling will mean more and better food, better health, and therefore, better education, less sickness, less misery, and a great reduction in infant and child mortality.

Let us compare, as an illustration of the existing conditions, the circumstances of two families, in each of which there are six children under sixteen years of age. In one the income of the father is £700 a year. As an allowance for his children the State permits him to deduct £150 from this when assessing him for income-tax. At the rate of 2s. 6d. in the £ (we will presume that he earns his income) this amounts to nearly £19 a year, or about 7s. 2d. a week. He employs a labouring man who is also married and has also six children, and gives him wages of 15s. or even 20s. a week. This labouring man receives no assistance in respect of his children, whereas the man with £700 per annum receives a rebate of £19 per annum, or 7s. 2d. a week, on account of his children, provided his income is earned, or £26 per annum, or 10s. per week, if his income is unearned.

No amount of instruction in Child Welfare and Mothercraft would enable a mother who had only 15s. weekly before the war, or 20s. during the war, to provide house rent, fuel, clothing and the necessary food to maintain a family of eight in fair physical efficiency. There must be continuous misery in such a home, and the misery must be exaggerated one hundredfold when the breadwinner is laid aside by sickness. It is quite unnecessary to point out that there are in this country a large number of families whose circumstances are worse than that mentioned. Mr. Seebohm Rowntree, who has perhaps given more time and thought than any other person to the subject of the want of sufficient nourishment amongst the unskilled labouring class in England, drew attention to the question almost twenty years ago, and yet what has been done to meet it? No doubt the housing conditions have to some extent been improved, and

wages have been raised, but still the condition of the unskilled workers is almost as urgent to-day as it was when he first drew attention to the subject. Mr. Seebohm Rowntree has stated that the only ultimate solution is to raise the wages of the worst paid workers; in this view he will be supported by nearly everybody, except employers, but, at the same time, I would like to point out with all due deference that raising the labourers' wages in Ireland under similar conditions to those prevailing before the war, will further restrict the employment of labour. Seventy years ago this country maintained nearly twice the population she has to-day; at that time there were fewer factories, no large shipbuilding works, food was not imported to the same extent that it is to-day, but there was more tillage, and the people lived more on the produce of the land. As wages increased it became less profitable to till the land, and more profitable to utilise all the suitable land for grazing. As employment decreased, emigration increased, with the result that the population has been steadily declining ever since 1847, and if the labourers' wages are considerably increased, unemployment will also increase and emigration continue, and so the population will go on decreasing, unless some means can be devised to make agriculture more profitable than raising cattle. It will be necessary to make such changes in our fiscal system that farmers will see that it is to their advantage to till more of their land before they will be able and willing to do so, and at the same time pay their labourers higher wages.[1] No doubt many will say that such a large economic change opens up the whole question of free trade versus protection. There are, however, many other ways by which this change might be brought about, but my object is merely to point out that the low wages of the labourer is one of the largest factors in the causation of disease and of the infant death-rate. From an examination of the particulars given in Table XV. (in the Appendix, page 197)

[1] Since this was written, the Government have drafted a Corn Bill which provides fixed minimum prices for wheat, oats and potatoes, so that farmers will be able to pay a larger wage to their employees and will be induced to till more of their land than formerly. A minimum wage for agricultural labourers is also proposed in the Bill which, with constant employment, should enable them to provide for the requirements of their families.

it will be observed to what extent poverty existed in the homes where deaths of infants actually occurred.

I have already mentioned that the labourer in the rural districts who has a cottage with an acre of land attached is much better off than the unskilled labourer in towns, but neither is paid a sufficient wage to enable him to provide himself, his wife and family of young children with suitable food and clothing to maintain them in health. It is often stated that the Irish labourer is lazy and inefficient, and although his wages are small his production is also small. This is no doubt true to some extent, but how few of us have tried to find a reason for his want of energy. It has been stated that the reason is that he is insufficiently fed. When he goes to England, Scotland, or America, and is better fed than he was at home, he can take his place with the hardest workers.

It appears to me, after giving the subject a good deal of consideration, that the best remedy would be to increase the rate of wages, and for the State to set apart on behalf of those families whose total income per week does not exceed a certain limit, 1s. per week for each child under fifteen years of age; it might even be thought desirable to limit the allowance to each child after the second, and to increase the amount to 2s. per week per child.[1] Assistance in this way would increase, with the increased requirements of the family, not only for food and clothing, but also in housing accommodation. While a man and his wife may live with comparative comfort in one room, it is quite wrong to allow a father, mother, and several children to live in one room.

The foregoing is merely a rough outline of how this most complex and most difficult problem might be met. It is possible that some better means for improving the position of the unskilled labourer, so as to enable him to provide sufficient food for his family, may be found. I simply wish to point out that

[1] The object of this allowance would be to meet the cost of providing for the requirements of the children when their number exceeds two, so that the parents and the older children would not be worse fed and clothed as the number of children increases. Seeing that the grant per child will not cover the cost of its maintenance, it is not apprehended that the allowance will have any adverse effect on the rate of wages of the unskilled labourer.

no real attempt has yet been made to deal adequately with the problem, and that infant mortality in this country, and particularly in the towns, can be considerably reduced if the questions of the proper feeding of infants and children and the housing conditions are placed on a satisfactory basis.

If the Government should decide to adopt the principle, or rather extend the principle that has already been adopted in regard to those whose incomes do not exceed £700 per annum, the details of such a scheme would require to be carefully thought out so as to meet the varying conditions, and to place certain minimum requirements on the parents receiving a grant as to the care of their children. The receipt of a grant should in no way lessen the responsibilities of the parents towards their children, but rather increase those responsibilities. Although charity, instruction, and the feeding of school children are all desirable and useful, still these will never solve this problem, nor should any honest, hard-working parent be expected to seek charity to help him to feed and clothe his family. The State has a right to expect that the services of every one living within the State will be placed at its disposal when required, and in return the State should, as far as possible, ensure that those who cannot help themselves should at least receive sufficient food to enable them to grow up healthy and robust men and women.

There are approximately one million, two hundred thousand children under the age of fifteen in Ireland, and if we assume that the proposal would embrace one-third of these, 400,000 children (a large estimate), the cost to the State would be a little more than one million pounds a year. It might be considered desirable to make the grant partly from local rates and partly from the State.

The endowment of parenthood, which was first undertaken in a limited way by the Government in 1909, and which has since been considerably extended, was the first step of an enlightened policy to give relief to parents of limited means in proportion to the number of their children. While I do not suggest that the present rebate on income-tax should be withdrawn, I think the assistance is more necessary and urgent in those classes where wages are low and food chronically scarce than in those

with a fairly large income. By lowering the maximum income for rebate of those who have no family, and by increasing the income-tax on those best able to bear it, the expenditure might be recouped in part at least. The sum itself is not very large, and in no other way would it be possible to expend a similar amount so as to secure such great benefits to infants and children, to the labourers and ultimately to the State.

In our whole system of Government I venture to say there is no more glaring instance of social and economic inequality than what has been here pointed out, and none that calls more urgently for immediate reform. It is to be hoped that the comradeship which has been such a marked feature of the war may continue after the war, and bring about a more complete recognition of community of interest between the State and the people.

Maternal and Child Welfare Schemes.

The best means of instructing mothers how to safeguard their own health and the health of their children is to establish schemes for the care of expectant and nursing mothers, infants and children. In towns these will embrace the providing of health visitors and the establishing and maintaining of clinics or infant and child welfare centres. In sparsely inhabited country parts a visitor will be the only activity, as it would be impossible for the mothers to bring their children long distances to the centre.

I wish it to be clearly understood, from the first, that under such schemes all these activities are to be under the control of the local authorities; voluntary societies or bodies, which exist at present or may be organised later, can be utilised and may play an important part in the campaign, but they should be directed and controlled by the local authority. All the voluntary organisations for maternal and child welfare operating in an area should be co-ordinated with the scheme of the local authority, and even where there is no such scheme these organisations should be co-ordinated so as to avoid over-lapping.

Holidays in the country for delicate children might be arranged in connection with child welfare schemes.

The foundation of all these schemes will be at first, and will for some time continue to be, the notification of birth to the local health body.

In the cities and larger towns the scheme will consist of :—

(*a*) A body of health visitors.

(*b*) One or more centres or clinics where the mothers may bring their babies at regular intervals, have them weighed, and examined by a doctor, and obtain the doctor's advice about their food and health in general. Also they will be instructed by the visitors or other ladies at the centre in how to make suitable clothes for the baby, the hygiene of their homes, their persons and their children, cooking, the nutritive values of certain foods, and other useful subjects. At some of these centres, food for the infants could be provided at a cheap rate.

Infant Welfare Exhibitions.

In some countries, particularly in the United States of America, Infant Welfare Exhibitions have been held with marked success. While this plan might be adopted in Ireland it would seem better to make each of the centres a miniature exhibition. Specimens of suitable model garments for infants should be kept and used to demonstrate to the attending mothers what rational and hygienic infant clothing should be like. Patterns of these and instructions for making them should be supplied. In this way the tight binder and the insanitary long clothes might disappear for ever. A baby's cot made from a banana crate at a cost of a few pence, and various other makeshifts which, though little in themselves, mean much for the child's welfare, might also be displayed. Simple sanitary feeding bottles should also be shown and demonstrations given in how to prepare the infant's food, how to give it, how to bath the baby, and all the other items of baby care of the knowledge of which many mothers are so lamentably ignorant.

There are few better ways of instructing mothers as to the nutritive values of foods than by comparing specimens of the ordinary foods in such a way as to demonstrate their nutritive value and cost in relation to each other. A small exhibition of

these articles kept in bottles in each of the centres would enable one of the voluntary workers or the nurse to give a short demonstration occasionally. By this means useful knowledge as to food would soon spread and would be bound to tell on the health of the children and the parents.

At first the centre will be chiefly an infant welfare centre, but gradually it will come to embrace also the welfare of the child and of the expectant mother. (The term ante-natal clinic has been used for this, but some object to the term as it strictly only deals with the welfare of the unborn child and ignores the mother. As an alternative " Pregnancy Centre " has been suggested, but again others object. Perhaps " Mother Welfare Centre " would do as well as any other name, for if we have " Mother, Infant and Child Welfare " we include all that we require.)

Health Visitors.

These should be women properly trained for that work, and should, in addition, have certificates as (*a*) trained nurse, (*b*) certified midwife, (*c*) sanitary inspector. They must not only have the necessary training, but also, just as essential, a considerable amount of tact and a pleasant manner. As they will have to visit the homes of the poor, they must be agreeable and acceptable to them. They must so fit themselves into the conditions of the district that the mothers will welcome these visits, and avail themselves of their advice and suggestions for bettering the home.

The duties of these visitors will be to visit each house (below a certain level of rental) at which there has been a birth, within eight or ten days of the event. Since notification of the birth has to be made within thirty-six hours, this gives plenty of time for the visit. It would be well for the visitor, generally, to arrange her first visit to overlap the visits of the doctor or midwife who attended the case, so that she might obtain any special information or instruction from them. If a Midwives Act for Ireland becomes law, these visitors might also act as inspectors of midwives.

Subsequent visits will be paid as often as the visitor considers them to be necessary. Sir Arthur Newsholme, M.D.,

estimated that about eight visits in the year would be the average. She will have to visit some mothers very often, mothers whom she finds to be ignorant of baby care, negligent or thoughtless, mothers who are dirty in their persons or whose homes are dirty, mothers who have lost many babies previously. It may be necessary to visit some as often as once a week. Others who are careful and skilled in mothercraft may only require one visit.

The object of the first visit is to see that the mother is comfortable and the baby well, and to urge the great importance of breast feeding. Other visits are utilised to instruct the mother in the feeding of the infant, how often and, if breast feeding is not possible, what other food to use, how to prepare it and how often to give it. The mother is also told how to clothe the baby and look after it. If anything that calls for a doctor's care is discovered, the mother is instructed to take the child either to her own doctor or the dispensary doctor or to a hospital for treatment. If there is a baby's consultation the mother is advised to attend regularly with her child.

In towns with a population exceeding 5,000 an infant and child welfare centre should be established. It must be understood that the visitors and centre are complementary. Neither, alone, can in town districts adequately deal with the problem of infant mortality. The visitor, by means of her visits, finds those mothers whose infants are not thriving, who are unable to continue breast feeding, whose children are in need of medical supervision. She sends them with their children to the centre where each baby is weighed and its progress noted; a doctor examines the child weekly or fortnightly and prescribes the necessary diet and recommends simple treatment. If more continuous treatment is required, the mother is advised to consult her private or dispensary doctor, or a hospital, for the centre is not suitable for continuous treatment, which is not usually undertaken at the centre. A grant should be made to local voluntary hospitals for the purpose of securing beds therein, when required, for the treatment of children attending the centre.

The local authorities under whose charge these activities take place will be :—for the cities, the Lord Mayor or Mayor and Corporation; for towns, the urban district council; and for the country, the rural district council. In each case, the scheme will be under the supervision of the Medical Officer of Health and of the Public Health Committee or sub-committee. It may be pointed out that in Ireland, very different from England, there are only four full-time Medical Officers of Health—a chief officer and his assistant in Dublin, one in Belfast and one in Londonderry. The Medical Officer of Health is the dispensary doctor who is paid for the two offices £120 to £200 a year. Ireland is much in need of the establishing of a system of full-time medical officers of health, both for town and country.

The Medical Officer of Health should, as far as possible, take a practical part in the working of the centres.

The data which we may take as a foundation on which to work is that given in the reports of the Local Government Board for England, viz. :—One health visitor can, on an average, pay about fifteen visits per day; and as the visits for the first year amount to about eight and some subsequent visits will be necessary, she may be taken as capable of looking after 500 births per year.

At a centre a doctor is capable of examining 30-35 infants at each session if not more than 8-12 of them are new. It has been found, however, that with a little experience and careful organisation of the work, up to forty-five can be examined. One gets to know fairly soon when a baby is really doing well, and when something is wrong, and a more detailed examination is necessary.

Not only will these centres be of immediate and obvious benefit to the infants and their mothers, but they will also be centres for instructing health visitors, and for the collection of valuable scientific data in relation to infant life. By means of the records of weights and progress, the values of various foods may be deduced, the gradual cure of various conditions, &c., may be noted, and in this way a mass of valuable information can be collected.

Professional and voluntary health visitors should undergo a regular course of instruction at some of the large and best organised infant welfare centres. The professional health visitor should take such a course in addition to her training as a nurse, midwife or sanitary inspector.

Scientific Investigation.

In all large towns there should be either a hospital for infants or a ward in a children's hospital where the more obscure and intractable infantile diseases could be treated, and where scientific investigation could be carried on in connection with a bacteriological and pathological laboratory. Mentally defective children and those suffering from functional nervous disorders and epilepsy, whose blood has given a positive reaction when submitted to the Wasserman test, have shown a decided improvement when treated with anti-syphilitic remedies. So encouraging have been the results that an examination should be made of the blood in every case where a child is showing signs of mental deficiency.

In all hospitals where infants are treated, instructions could be given to students and nurses, and special classes might be formed for the training of health visitors.

Medical Inspection of Children.

In a proper system of infant and child welfare, not only should the infants receive attention but the children up to five years of age. No section of preventive medicine gives such encouraging and rapid results as that of the medical inspection of children both before school age and during attendance at school. It is almost marvellous to see the change wrought in a seemingly stupid, dull, mouth-breathing child by the removal of his adenoids. Another child may be found to suffer from enlarged tonsils with all their dangers—rheumatism, heart disease, tuberculosis, enlarged glands, abscesses, &c. The removal of these dangerously diseased tissues both improves his condition and protects his health and life. Carious teeth are a common evil which are the cause of much ill-health, for they

are frequently the path of infection by which tubercle bacilli or other organisms enter the system. The number of recruits who had to be rejected since the beginning of the war on account of valvular disease of the heart was very large. Many of these conditions were the result of scarcely noticed mild attacks of rheumatism, probably mis-called "growing-pains," which left their mark behind on the heart.

Acute rheumatism is the result of microbial infection of the blood, primarily due in most cases to septic conditions of the mouth and throat—carious teeth, enlarged tonsils, adenoids, &c.

These are only some of the conditions which could be detected and for which the necessary treatment can be provided.

As was pointed out before, there is no system of medical inspection of school children in Ireland. We would propose, therefore, the appointment of School Medical Officers whose duty would be to make periodic examination of all children in the national schools. Even a quarterly inspection would do a great amount of good in detecting, at an early stage when they are amenable to treatment, various diseased and unhealthy conditions of the children. Nothing but the most simple treatment should be undertaken by these officers; all cases requiring continued treatment should be referred to their own medical attendant, or the dispensary doctor, or admitted to the local infirmary if necessary, or, in the larger towns, to one of the general hospitals.

By this means many conditions will receive treatment which, without inspection, would be allowed to continue for a long time and possibly undermine the constitution of the child or endanger his life.

The medical inspection of young children followed by the medical inspection of school children, would practically lead up to the time when they would come under the provisions of the Insurance Act. Apart from the saving of life and the prevention of permanent incapacity which the medical examination of children would effect, it would also be a great economic gain, as the ultimate saving in the cost of medical attendance and hospital treatment would outweigh the cost involved in carrying out a

properly organised system of inspection. A large number of children develop disease during childhood which, if undetected, becomes permanent in later life, entailing constant medical attendance.

General Outlines of Maternal, Infant, and Child Welfare Schemes for the County Boroughs.

DUBLIN.

Dublin County Borough only includes the City proper and not the residential districts surrounding it—Pembroke, Rathmines, Kingstown, &c., which are under separate local government. The annual number of births in the city is under 9,000, and if we suppose that 2,000 of these are in families which are able properly to look after the welfare of their children, about 7,000 remain. For this number it will be necessary to allow a staff of fourteen health visitors, or, better, a chief visitor with fourteen others. The city should be divided into districts, and each put under the charge of one visitor. The whole should be under the supervision of the Chief Health Visitor who should be responsible to the Medical Officer of Health. This provision of visitors is probably the most important part of the work, but the institution of centres is also important.

Dublin City is fairly compact and not very large, so I would suggest that one chief welfare centre should be established somewhere near the centre of the area—in the locality of the northern or southern quays, not far from O'Connell Bridge, would seem to be the most suitable place. Such a situation would also have the advantage of proximity to the City Hall, and would be close to the tram terminus.

These central premises might conveniently be made the headquarters of the whole infant and child welfare work; the records should be kept there and the visitors should have their offices in it. The portion used for the centre should consist of a large waiting room for mothers, where the babies would be undressed, a weighing room, and a consultation room. The staff necessary would consist of a doctor and three or four assistants.

Medical Attendance.

I would not recommend that a whole-time officer should be appointed, but rather that the services of several practitioners in the city, who have had considerable experience of the treatment of the diseases of infants and children should be obtained. As I would recommend two sessions, morning and afternoon daily for each week-day, except Saturday when there would be only one, it will be seen that appointments must be made for eleven sessions weekly. The Medical Officer of Health or his assistant should act as consultant at two or three, leaving eight or nine sessions to be attended by other doctors. Five or six medical men or women should be appointed to fill these vacancies. It must be made a rule that they shall always attend at corresponding sessions each week and so see the same infants. I consider it unfair to expect doctors to do this work gratuitously, and so I would suggest remuneration at the rate of £1 per session attended.

Attendants.

One attendant at least should be one of the health visitors who might take it in rotation to attend at the centre. Another must be a paid secretary to do the necessary book-keeping. The rest might, with advantage, be voluntary workers supplied by arrangement with one or other of the societies at present at work. The duties of the assistants would be to take the names of the mothers as they arrive, find the records of the infants, and send them into the weighing room when required; to weigh the infants (undressed), and send them into the consultation room with the records; to examine the doctor's notes about diet and to explain and give typewritten instructions to the mothers; and to sell what food is required.

Food.

Knowing the difficulty, in Dublin, of procuring pure fresh milk, in storing it without any proper facilities and in preserving it from contamination (the extent of which is shown by the magnitude of the death-rate from gastro-intestinal disorders) I am inclined to think that the most satisfactory food

for infants, who are not breast-fed, would be dried powdered milk. Several firms make a very satisfactory article of this nature. This dried milk has the advantages of being free from organisms and being easy to keep from contamination. There is no storing of liquid food in the house, only sufficient for each feed being prepared at a time. It is cheaper than instituting a municipal milk supply where the milk would be pasteurised and bottled and there would be no need of depots for its sale, or of means of distribution, for the mother can buy sufficient for a week's supply at the centre when she attends with her infant. Having had some experience of its use, I can testify to its satisfactoriness; it is often better digested than fresh cow's milk and its continued use is free from risk of rickets or other disease. Its use in many cities in England has had a very considerable effect in lowering the rate from gastro-intestinal disorders among its users. I would recommend that the dried milk should be sold at cost price. This offers a fairly considerable pecuniary advantage to the mothers who attend the centre and to some extent acts as an inducement for them to come. There is no reason to fear any improper use being made of this facility.

If it is decided to supply food gratis the administration of it should be undertaken by some of the voluntary organisations. Their visitors, on the discovery of a really needy case, might give a book of tickets to the mother. Food could be obtained from the centre by means of these tickets, and on the presentation of them by the city to the society a corresponding sum of money might be handed over, or the outlay might be apportioned between the city and the society. The Treasury will not reimburse any sums expended on the supplying of food free or at a cheap rate.

In addition to the main centre, I think that four subsidiary centres—two on the north and two on the south side of the city—might be established to meet the convenience of those who find it difficult to attend at the main centre. Each of these might be placed to a large extent under the control of one of the voluntary bodies, while being under the supervision of the Medical Officer

of Health. One health visitor should attend in each, and also a medical practitioner on the same terms as in the chief centre. Use might be made of the premises of some of the existing baby clubs in the city. The routine in them would be exactly similar to that of the centre described. To commence with, if these four were each open on one day a week, it would probably be sufficient.

Now I have arranged fifteen sessions weekly for the city, eleven at the main centre and four at the subsidiary centres. If there were about 100 babies' names on the roll for each session, the required attendance of forty or so would be obtained. Some will not attend regularly, and some will only be required to attend fortnightly or monthly. This represents 1,500 babies attending the centres, just about the necessary proportion out of the 7,000 embraced by the scheme.

The work of the voluntary organisations has been touched upon—that is, the charge of the four subsidiary centres may be placed in their hands. In addition they may do a considerable amount of visiting. The Medical Officer of Health should supply each society which requests him with a list of houses which might be visited. The society must only make itself responsible for the visiting of as many infants as it is capable of efficiently looking after. These lists might be supplied weekly. It must be quite understood that this visiting is in addition to, and not in substitution for, the official visiting by the health visitors. This home visiting will enable ladies to understand the home conditions and to improve them. It will also help them to find really deserving cases to which they may extend their help by means of the tickets referred to above. It would be a good thing to leave the instruction imparted to the mothers at the centre in the hands of the voluntary workers. Societies might establish free or cheap meals for expectant and nursing mothers, although when these meals were tried in Dublin and Belfast they were not successful. It is repugnant to the Irish mother to go and receive food for herself when she can bring nothing away for those at home who are also in need of food.

As time progresses, and the mothers become more friendly with the health visitors, it will be found that the work of the

centres will increase, more infants and children will attend, and women who are pregnant will come for advice. (A separate clinic for the latter might be an advantage.) This increase in the amount of work will be met by the attendance of two doctors instead of one at each session and the institution of two or more sessions at each of the subsidiary centres weekly.

The aim is to make Dublin a centre for the teaching of infant and child welfare work. This could be worked in conjunction with some of the educational bodies in Dublin—the Department of Agriculture and Technical Instruction, for instance—and health visitors might be trained both in the work at the centre and also in home visiting.

The total expense of this scheme would be less than £3,000 per annum, and as the Treasury grant would reimburse one-half of this sum, it would only cost the city £1,500 a year—considerably less than ½d. in the pound on the rates.

BELFAST.

For Belfast I would propose practically the same scheme as that for Dublin, but since the number of births in Belfast is eleven thousand, whereas Dublin City has rather less than nine thousand, the Belfast scheme must be larger.

If we suppose that 2,500 births will not require attention, the 8,500 which remain will require a staff of seventeen health visitors.

I would again suggest the plan of having one main centre and a number of sibsidiary centres—say six. If the main centre had eleven sessions per week, and the subsidiary centres each two, provision will be made for over 2,000 infants, sufficient to commence with. As occasion arises, two consultants can work at the centre at the same time, or some of the small centres can open oftener than twice each week.

As in Dublin, dried milk will prove the most satisfactory food, and the same arrangements about free feeding might be made. Some, or all, of the smaller centres might be managed by voluntary societies, but the main centre, which would serve as a

model, would be completely under the control of the Public Health Authorities.

Neither Dublin nor Belfast has adopted such a complete scheme as either of these set out above, and it is to be regretted that this work, for which the municipality is essentially responsible, is left largely to voluntary bodies, which are seriously hampered by lack of funds. If, however, some rich philanthropist could be persuaded to initiate a scheme such as is outlined here, and maintain it for, say, three years, and if at the end of that time it was found to be doing good work, and had caused a marked reduction in infant mortality, the Corporation would, no doubt, take it over. Of course, such an individual would be eligible for reimbursement of one-half of the annual expenditure by the State in exactly the same way as the city would be.

CORK.

Cork, having about eighteen hundred births per annum, would require three health visitors. One centre, conveniently situated and open, with a doctor in attendance, for four sessions each week, would be ample to commence with.

LONDONDERRY AND LIMERICK.

These cities, with a little over 1,000 births per annum each, might be adequately dealt with by two health visitors and a centre open for three sessions weekly.

OTHER TOWNS AND RURAL DISTRICTS.

The other towns with from 600 to 130 births per annum (populations of 27,000 to 5,000, would each require only one visitor and a centre (which might be a building used for other purposes at other times), which would be open twice or once a week. Where the number of births is small, the visitor's spare time might be used for other activities, such as visiting patients suffering from tuberculosis.

I consider that small towns, with populations of 5,000 or less, might make an arrangement by which they could secure the part-

time services of a nurse—Queen's Jubilee Nurse—for the furtherance of infant welfare work.

It would be impracticable for rural districts to have an infant welfare centre, but I think that each rural district council should employ a visitor, who, by visiting in the homes, by her instruction and advice, would do much to lessen the mortality among infants and children.

Summary of the Principal Recommendations.

The following is a summary of the principal recommendations made by me :—

1. Registration of midwives on the lines embodied in the Midwives Act, 1902, should be extended to Ireland, and a Central Midwives' Board established.

2. Further facilities for the institutional treatment of difficult cases of labour should be provided.

3. The provisions of the Notification of Births Act, 1907, should be declared to be in force in all rural districts in Ireland.

4. Schemes for the instruction of expectant and nursing mothers as to the safeguarding of their own health and that of their infants and children should be organised by all urban and rural authorities, and should include the employment of Health Visitors and embrace as far as possible all local voluntary agencies engaged in work of this kind. Where such schemes are not undertaken, the work of the voluntary organisations should be co-ordinated so as to avoid over-lapping.

In the larger towns, a system of infant and child welfare centres, varying in elaboration according to population, should also be established.

5. The Maternity Benefit under the National Insurance Acts might be made dependent on the attendance by the expectant mother at a Maternity Centre. In localities where there is no such centre an intimation sent to the Health Visitor for the district would serve the purpose.

6. The importance of breast feeding should be constantly inculcated in the interests both of mothers and infants.

7. Mothers should be warned, in case of any departure in their children from normal health, to obtain early medical advice in regard thereto.

8. Demonstrations should be given to mothers with regard to suitable kinds of clothing for infants and children, and food values.

9. The arrangements for the home nursing of mothers and children should be developed and extended.

10. Scientific investigation of infantile diseases and serologic examination of the blood of mentally defective children, and of those suffering from functional nervous disorders should be instituted.

11. Schemes for the treatment of venereal diseases should be inaugurated by the County Authorities.

12. The Children Act, 1908, should be so amended as to—

(*a*) Require the preliminary approval of the local authority, where an infant is intended to be received for reward, to the proposed foster-parent and foster-home.

(*b*) Prohibit the adoption of an infant by a foster-parent for a lump sum of money without the approval of the local authority.

(*c*) Empower the local authority to direct the removal of an infant from undesirable surroundings, and to make suitable arangements for its boarding out.

13. The boarding out system should be extended to other classes of workhouse children besides orphan and deserted children.

14. Mothers of illegitimate children should be detained in nurseries for the purpose of nursing and breast feeding their children until the latter are at least three months old.

15. Mothers of illegitimate children should be enabled to proceed in their own names against the putative fathers of their children.

16. The Education (Provision of Meals) (Ireland) Act, 1914, should be amended so as to extend to rural districts, and a grant from the Treasury should be given in aid of the system.

17. A scheme for the medical inspection of school children should be introduced.

18. Hygiene should take a more prominent part in the curriculum of primary schools, and continuation classes for the instruction of the older girls in the care and management of infants and young children should be instituted.

19. The age at which girls are allowed to work in factories should be raised to fifteen years.

20. The published statistics of Infant Mortality should show the mortality for each of the first four weeks of life and for the second and third months in respect of each county, county borough and principal town; and also the detailed causes of death for each county and county borough.

21. Every effort should be made to improve the certification of deaths, and secure greater precision in certifying as to the cause of death.

22. Strict inquiries should be made with regard to the deaths of infants not under medical attendance.

23. A system of full-time Medical Officers of Health should be established.

24. The provisions of the Infectious Disease (Notification) Act, 1889, and of Part I. of the Tuberculosis Prevention (Ireland) Act, 1908, should be applied to all districts in Ireland in which these enactments have not yet been adopted.

25. After the war, urban authorities should aim at effecting a great improvement in the housing conditions and at the abolition of the slums. Urban District Councils should be empowered to provide houses for the poorer working classes in much the same way as Rural District Councils provide labourers' cottages in their districts.

26. Greater attention ought to be devoted to systematic scavenging, both public and domestic, and to the paving of yards, the concreting of passages near dwellinghouses, and the removal of all refuse, manure, &c., from the proximity of dwellinghouses.

27. In districts where there is difficulty in obtaining milk, the urban and rural district councils should establish milk

depots for the sale of milk for expectant and nursing mothers and young children.

28. A more vigorous and uniform enforcement of the Dairies, Cowsheds and Milkshops (Ireland) Order of 1908 is called for. Provision should be made in the larger towns for carrying out bacteriological tests for the detection of tubercle bacilli in the milk supply.

29. The existing Union Infirmaries and Hospitals should be placed under the management of committees of county councils, and in this way the institutions would be freed from the taint of pauperism.

30. Open spaces and covered play-centres should be provided in or near working-class districts in the large towns.

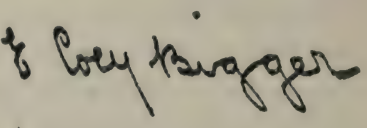
31. The economic condition of the labouring classes in Ireland requires to be raised through a general increase of wages, and some special assistance given where the family is large, by means of State aid for each child after the second, or a grant partly from local rates and partly from Imperial funds.

32. As a means of remedying poverty, the resources of the country should be developed.

CONCLUSION.

I have now finished my task; I have shown as well as I am able the various factors in this highly complex problem of infant and child sickness and mortality; I have shown what has been done and what progress has been made; and I have shown what is to be done, what must be done, if we are to check the present terrible drain on infant health and life. Nothing more remains for me but to emphasise once again what cannot be over-emphasised, that the duty of saving the infant lives rests on each one of us. We cannot, if we are honest, say that it is no concern of ours, but a matter for the State or the municipality. The people are the State, they are the municipalities, and if they do not move, these bodies will not move. Now is the time to save the lives of infants and children, of which we lose over thirteen thousand each year under the age of five years.

Our voluntary organisations have deservedly received much commendation and eulogy for the excellent work they have done, and it is earnestly hoped that their means will be augmented, so that they will be able greatly to increase their activities in the future; but although their work has been excellent, it has been hampered by the poverty of a large section of those whom they are trying to benefit. They cannot, therefore, attain the results which their labours merit, until the large and most important question comprised in securing for all children an adequate supply of food, and sanitary housing conditions has been placed on a satisfactory basis. It is a national question of vital importance to safeguard in the interests of the State its most valuable asset—the health of the coming generations of men and women. If our energies, together with the necessary State assistance, were properly directed with a view to attaining this object by preventing the diseases of infancy and childhood caused by poverty and ignorance, there would grow up a more healthy and vigorous race to take full responsibility as citizens of the State. What a change this would make in our whole system! How many lives might be spared and homes left bright on which death and disease now cast their shadows. Shall we not stretch out our hands to save the children? Shall we not strive to make of them strong and healthy men and women? We can raise no better memorial to those who have given freely of their life blood for us than this—an increase of many thousands of healthy, happy, and contented children in the homes of the country, children who will take our places when we go along the path which every mortal follows. Let us do this, our duty, in the interests of humanity and for the honour of our country.



REPORT ON MATERNITY AND CHILD WELFARE IN DUBLIN COUNTY BOROUGH.

By Ella G. A Webb, M.D.

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There is no doubt that while the mortality among children under one year of age is very low in Ireland as a whole, that of the City of Dublin is abnormally high; and it is an equally undeniable fact that while in all the large cities of England they have managed to reduce their infantile mortality to a very considerable extent during the last ten years, that of Dublin County Borough remains as follows :—

	Year	Infant Mortality per 1,000 Births in Dublin County Borough
	1906	150.7
(Cold wet summer) .	1907	160.2
	1908	151.8
	1909	150.8
(Very cold wet summer)	1910	147.4
(Very hot summer) .	1911	165.2
(Very cold summer) .	1912	146.6
	1913	160.0
	1914	155.6
	1915	160.3

The following brief sketch of the chief agencies connected with child welfare has been made with a view of ascertaining if possible the main causes which may account for this unsatisfactory state of things, and also in the hope of discovering among what class of children the chief loss occurs. What follows applies to Dublin City only.

Taking a general view we are struck by the fact that although the poverty and bad housing in a large part of the city certainly tends to a high infant death-rate; on the other hand, this should be largely counteracted by the fact that, compared to other cities (Belfast, Leeds, Sheffield), Dublin is not an industrial city, and consequently many mothers, not being employed in factories, are able to remain at home and tend and nurse their children, which is a great asset.

We may start by dividing the children into two great classes.

A.—Children which come under the care of the Poor Law; and

B.—Those which come under the care of Voluntary Organisations.

A.—Under this heading are included :—

1. Infants born in the Workhouse (generally illegitimate) who remain in the care of their mothers. These generally do very well.
2. Infants sent in on a doctor's note. These are frequently literally sent in to die, being cases of hopeless illness, such as tubercular meningitis and the like.
3. Infants which are brought to the workhouse nursery owing to the death or disappearance of the mother, or are illegitimate nurse children brought in because the mother has ceased to pay for their support. Among these the mortality appears to be appallingly high. This is in a small measure due to the fact that they are in an unsatisfactory condition when brought in, but is chiefly owing to the condition, well known in all large establishments for infants as " hospitalisation." This condition of low vitality and suscepti-

bility to infection is due to the fact that it does not suit any infant to lie for hours in a cot. It needs "mothering," and this can only be had if the staff of attendants is very large. Also there seems to be constant infection of one child from another chiefly in the way of epidemic diarrhœa or bronchitis. The consequence is that children brought in healthy and strong frequently succumb to one or other of these affections.

4. Infants which are left by their mothers in the care of a "nurse" who is supposed to report herself to the Board of Guardians within forty-eight hours of the time she receives the child.

These children are generally illegitimate, and are placed with the "nurse" either by the mother herself or by some of the philanthropic societies which take up rescue work.

The flaws in this arrangement are numerous; in the first place, the nurse rarely reports within the specified time, and even if she does, it is very difficult then to take the child from her even if she appears to be ignorant and dirty, or unsatisfactory in any other way. These infants are inspected by ladies appointed by the Board of Guardians, but the number of cases to each inspector is very large, their powers are very limited, and they are given no special training in infant care before taking up their duties. In fact, unless a case of flagrant neglect or cruelty occurs, their recommendation to remove an infant from a "nurse" is rarely likely to be adopted.

5. Infants living with their mothers who are widows and recipients of outdoor relief. There is no inspection of these children, and the relief given is that which is usual for adults, viz.:—bread and meat, milk never being given without a doctor's orders in case of illness, even though there may be young children in the family.

B.—Voluntary Organisations.

1. *Hospitals.*

	Total Beds	No. of Beds available for Children
Adelaide	150	24
Children's, Temple Street	86	86
Drumcondra	38	4
Jervis Street	120	9
Sir Patrick Dun's	125	8
Mater	364	20
Meath	160	16
Mercer's	100	7
[1]National Children's	43	43
Richmond, Whitworth and Hardwicke	Children's Ward is now used for soldiers	
Orthopædic	79	79
Royal City of Dublin	150	19
St. Vincent's	150	12
Steevens'	250	14
City Skin and Cancer	22	3
Royal Victoria Eye and Ear	—	—

[1] A great deal of the accommodation at present is taken up by Wounded Soldiers.

2. *Infant Aid Society.*

This is an organisation working under the Sanitary Committee of the Corporation consisting of over 100 voluntary workers who devote their leisure to visiting cases sent to them by the sanitary inspectors, who receive them in accordance with the Early Notification of Births Act. These visitors undergo

a short course of instruction before receiving the badge which authorises them to work. The Society collects a certain amount of money which is spent largely on milk and food, and orders for these can be distributed by the visitors as well as instruction and advice given to the mothers. By means of the recent grant four whole-time appointments have just been made by the Society, viz. :—One fully-trained Nurse with special experience of infant mortality work in England at £100 a year, and three other fully-trained Nurses at £60 a year. They will assist and direct the work of the voluntary visitors.

3. *"Babies' Clubs" or Infant Consultations.*

These were started by, and work under, the Women's National Health Association. They are at present eight in number :—

1. Gordon Club, 48 The Coombe. Open each Thursday.
2. St. Monica's Club, Usher's Quay. Open Tuesdays and Fridays.
3. St. Patrick's Club, 30 Golden Lane. Open Tuesday and Friday afternoons for Babies, Wednesday mornings for Mothers (ante-natal clinic), Saturday mornings Clinic for School Children.
4. St. Andrew's Club, Lower Mount Street. Open every Wednesday.
5. Slainte Club, 28 Arran Quay. Open every day. Doctor on Thursdays.
6. St. Anthony's Club, 34 Granby Lane, off Rutland Square. Open every Thursday.
7. Sibail Club, 37 North Great George's Street. Open every day. Doctor on Thursdays.
8. St. Laurence O'Toole's Club, Seville Place. Open every Wednesday.

In all these Clubs the general plan is the same, and consists in weekly or fortnightly visits from the doctor, who holds a sort of clinic, giving instruction and advice, records being kept

of all cases. This is supplemented by visits from the nurse attached to each Club, who sees that the doctor's instructions are carried out, &c. There are also classes for sewing, cooking, home hygiene, first aid, and home nursing, &c.; boot clubs, coal funds, savings banks, &c., are started, and the women find the afternoon spent at the Club with the tea and social intercourse a pleasant change from their home life. Arrangements are now being made for the nurse to live on the Club premises, so as to be at hand to help any mother in a case of emergency. The sum received by the Clubs from the recent Grant has been expended on the nurses' salaries alone, the rest of the funds being raised by the local committees of ladies. As more and more of the home visiting is taken over by the Infant Aid Society, the Club Nurse can devote herself more to the inner working of the Club, keeping of records, visiting children over one year old, and looking up expectant mothers.

Other agencies are :—

4. *Care of Invalid Children in their own homes.*

This branch of work provides special food, &c., under orders from the hospital where the child has been. Massage, surgical appliances, &c., are also obtained, as far as funds allow, for cases which need them. It also puts the case in touch with suitable philanthropic agencies.

5. *Dublin Samaritan Committee.*

Provides food and clothing for tubercular patients in their own homes. Children are included in this work. They also separate tubercular members of the family by giving beds, bedding, &c.

6. *School Children's Dental Clinics.*

Half the expense of these Dental Clinics is defrayed by the National Board of Education and half by the Women's National Health Association. The Clinics are usually held in the premises of the Babies' Clubs; they are three in number, and are at St. Monica's Club, Gordon Club, and St. Patrick's Club.

7. *Playgrounds.*

The following playgrounds or open spaces exist in the city :—

1. St. Mary's, in Mary Street.
   Christchurch Gardens.
   St. Audoen's, Corn Market.
   St. Andrew's, Cook Street.
   St. Michan's, Halston Street.
   Hill Street Playground.
   Fairview.

These are owned by the Corporation.

2. St. Monica's, St. Augustine Street.
   Gardening Ground, Constitution Hill.
   Playground, Constitution Hill.

These are owned by the Women's National Health Association, and are not merely open spaces, but places where the children are looked after. A nurse attends in the morning to mind the little ones, and in two of them a doctor also attends, thus getting into touch with many sick children who would otherwise escape notice.

3. Tenter's Lane.
   Brabazon Playground, Pimlico.
   Maitland Playground, New Row.

These are owned by the Earl of Meath.

4. Halliday Road, Aughrim Street—owned by the Dublin Artizans' Dwellings Co., Ltd., and—

5. The Iveagh Play Centre, Bull Alley—owned by Lord Iveagh. This is an indoor or covered centre, very well organised with games, kindergarten plays, and Swedish drill for the children.

8. *Inexpensive Dining Rooms.*

There are several of these in the city, notably those at Meath Street, Denzille Lane, Seville Place, Gardiner Street, the Mendicity Institute; but these are not in any way connected specially with Infantile Mortality work.

9. *Day Nurseries.*

These exist in various parts of the city, but they are not sufficiently numerous, neither are they superintended by people with any expert knowledge. The usual plan is that a kindly woman or a committee of a philanthropic society opens a creche, where babies can be left for a small charge. The mother is generally supposed to provide the food for the day. Many of the creches are not open early enough to be of use to women going to work at 6 or 8 o'clock, consequently many babies are left in charge of unskilled persons or young children. The best known are Meath Street, Gardiner Street, Power's Court, and Blackhall Place.

10. *Convalescent Homes.*

Cheeverstown. Under the Jubilee Nurses.

Cappagh.—Convalescent Home for Temple Street Children's Hospital—Thirty beds.

Sutton Preventorium.—For non-tubercular patients.

Skerries.—A Home for Protestant children supported by the George's Hall Mission.

Kingstown Cottage Home.—For Protestant children who are orphans or whose parents are in temporary difficulties.

11. *Fresh Air Funds.*

Pearson's Fresh Air Fund sends children to homes in the country for a fortnight—non-sectarian.

Country Air Association—Protestant.

Fresh Air Association.

12. *Children's Clothing Society.*

Provides clothing for the very poor under the inspection of the Police.

13. *National Society for the Prevention of Cruelty to Children.*

This Society is too well known to need any explanatory comments on its work, and its help can always be relied on to enforce the orders of a doctor or nurse when the mother wilfully neglects to obey them.

Recommendations.

The fact that most of these organisations have existed for a couple of years at least, and have not had any effect at all on the figures in the mortality returns, tends to show that something is lacking.

The following appear to be the chief points in which a great improvement could be effected :—

Taking them in the order they appear in the foregoing Report :—

A.—Cases under the Board of Guardians.

(3) and (4) It is most important that "nurses" should be obliged to register and obtain a licence or certificate of fitness *before* they could receive any child to care. Such licence only to be given after inspection and searching inquiry by the Lady Inspector or other skilled person. The woman to be liable to have her licence removed at any time should the Inspector think fit.

For the present it should be urged on all philanthropic societies connected with rescue work to exercise much greater vigilance with regard to the women to whom they give infants. That this is not done is shown by the fact that a case is recorded in which six babies in succession were given to one woman to nurse although each in turn had died.

It should also be made illegal to receive a lump sum with an illegitimate child. The money should be paid weekly and only after inspection by the inspector, health visitor, or competent person from a philanthropic society.

The staff of the workhouse nurseries should be increased, even if only by pauper inmates who would tend and care the babies. Isolation, segregation and disinfection should be practised much more than at present—the babies kept more in the open air, in open shelters, &c.—and dispensary doctors, clergy, &c., should be warned to avoid as much as possible sending healthy infants in amongst sick ones, if any other possible arrangement can be made for having them looked after.

(5) In the case of women receiving outdoor relief, those with young children should *always* receive a certain amount of milk and oatmeal instead of some of the bread and meat.

B.—Voluntary Organisations.

(1) *Hospitals.*—Although it appears from the above list that over 300 beds are available for children, it must be remembered that these are mostly for surgical cases, often of older children, and that the ordinary arrangements of a general hospital do not admit of the care of young infants. Also in the dispensaries connected with these hospitals, often crowded as they are with adult patients, there is little time to go into elaborate instructions on infant feeding. Three or four set aside one special day in the week for infant work, but that is, of course, quite inadequate to the needs of a large city. What is badly needed is a large central Infants' Clinic, with a small number of beds for exceptional cases, to which difficult cases could be sent from the health visitors and from the Babies' Clubs. This would also supply another great want—namely, a Centre where academic instruction in the subject could be given to medical students and all the nurses and workers engaged at this particular work. Judging from similar places of this kind in London, &c., many ladies, domestic nurses, school teachers, &c., would be glad to have a chance of attending such classes, and their fees would materially help in paying the expenses of upkeep.

It is at present much to be regretted that the Medical Schools give no particular course of instruction on this subject.

(2) and (3) With regard to the Infant Aid Health Visitors

and the Babies' Clubs, what is most needed is better training of the workers, and more co-operation between the two organisations. Up to the present the visitors have only received a short course of lectures touching the merest outlines of the subject. These should be supplemented, and a considerable amount of practical work included. All visitors should instruct any young or ignorant mothers to visit the Clubs, and the Clubs should communicate with the visitors regarding cases which cease to attend, or who are in need of help or supervision.

(9) Day Nurseries should be more numerous and better equipped, and should all be inspected frequently by trained and competent health visitors or nurses, who would give instruction as to the correct feeding of each child, and direct which cases should be brought to the doctor. The doctor could either visit at the creche or see the infants at the nearest Baby Club.

(10) With regard to ante-natal work, which is of such great importance, much help might be given by (1) the midwives when engaged by expectant mothers to attend to them, and (2) by the insurance societies, if when a woman applies for maternity benefit during the last months of pregnancy they could put her in touch with some of the agencies who would help her, and impress on her the necessity of so doing. The maternity benefit itself is often spent in ways which benefit neither mother nor child.

(11) Another point which should not be lost sight of is the fact that the present lack in Ireland of settlement law tends very largely to swell the numbers of illegitimate children which die in Dublin. There is no doubt that most girls in the country who "get into trouble" come up to Dublin and put their illegitimate infants out to nurse in the city, whence they usually drift into the charge of the Poor Law Guardians. The chances for the infant would be infinitely greater if it was sent back to the country district to which it belonged, or if there was some large institution in which the unmarried mothers were kept and allowed to retain the charge of their infants. There is one such institution, but it is very small, and only for Protestant girls.

A great need is that of a reliable milk supply. Until there is a supply of milk of known good quality and low bacterial content obtainable at a moderate price and under constant supervision and inspection by the Public Health Authority, there is bound to be a large amount of epidemic diarrhœa and surgical tuberculosis in the city. In fact, there are few reforms which would probably alter the death-rate as much as a milk supply of this kind properly administered by the various agencies already mentioned, such as the Health Visitors, Babies' Clubs, &c.

(12) The dispensary doctors and doctors working in city districts should be put in closer touch with the various agencies for child welfare work. Although most of them agree that the high infantile death-rate is due to the ignorance of the mothers on questions of hygiene and infant care, they do not know to whom to turn to remedy these defects. If a Nurse or Health Visitor could attend at the dispensary and follow up these cases much good might be done.

Lastly, it should be urged that some academic recognition of the great problem should be given in the Medical Schools. In neither the schools nor hospitals is the subject of infant care and treatment made a special subject. Clinics are given in the lying-in hospitals, but the infants there are generally healthy, new-born infants in good surroundings before they have reached the miserable condition in which they are found later on.

The treatment of infantile dietetic diseases is quite as specialised and important a subject as ophthalmology or hygiene, and should be treated as such, for it is only by a combination of instruction and co-operation that any lasting good will be achieved.

REPORT ON MATERNITY AND CHILD WELFARE IN BELFAST COUNTY BOROUGH.

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For work, and good work, for the bodies (and souls) of women and children, Belfast does not lack. But it is work almost entirely directed towards the repair of evil. Our civic conscience is only beginning to awake to the truth of the old proverb, " Prevention is better than cure," in matters of health, whether of body, soul or mind. Hence as yet, very little work of an *educative* and *preventive* kind, of the kind in fact which the words " *Maternity and Child Welfare* " have come to stand for, has been attempted, and even that little languishes for want of the understanding which means support. But when we survey the numerous agencies which are concerned in one way and another with the health of mothers and children, we can see that a central organising power could, with very little difficulty, co-ordinate the work into an admirably comprehensive " Welfare " scheme, a scheme which, while leaving each institution as free as ever to proceed with its own work in its own way, would unite them all in a common fight against the *causes of disease.*

These agencies may be classified under the headings of *Academic*, *Official*, and *Voluntary*, while the voluntary class may again be sub-divided into Sectarian and Non-Sectarian, the latter, however, not necessarily connoting only " secular."

I. Academic.

Queen's University has set the seal of its approval on Child Welfare work by including it in the list of subjects for students

taking the Diploma in Social Science, instituted in October, 1915. All such students must attend a course of lectures on Hygiene, in which special reference is made to the hygiene of childhood, and any student may present for part of his or her practical work (an obligatory part of the course), attendance during a certain number of weeks at some of the local "Babies' Clubs." This attendance must include visiting of the babies in their homes, and the writing of an essay on some question of infant welfare arising out of such work. The Medical Officer to the Women's National Health Association Babies' Clubs has been "recognised" by the Senate as the responsible person for supervising the work of students choosing this section, and certifying as to attendances, &c. The student's essay is also submitted to this medical officer for criticism before being placed to the student's credit.

II. Official.

Official work is carried out by the—

(*a*) *Poor Law Guardians.*
(*b*) *Public Health Committee.*

The *Belfast Poor Law Guardians* are rather specially alive to the importance of caring for infants and children. They have provided a fine block of buildings, known as the Dufferin Hospital, devoted entirely to the needs of sick children, other than infectious cases. Boarded-out children are supervised in the usual way by a special committee of ladies, and the services of a whole-time lady inspector, who is a trained nurse, are retained for the visiting of nurse-children, registered with the guardians, according to the requirements of the Children Act. This inspector "visits each house at least once a month, inspects the houses and children, and gives instruction in nursing, ventilation, clothing, &c." She also makes a practice of encouraging the foster-mothers to take the babies to the various Babies' Clubs. During 1915 she paid 2,663 visits to 438 children in 375 houses.

The Vaccination Officer of the Union also gives much of his

time to this work, inspecting houses, hunting up unregistered houses, and so on.

The Public Health Committee employ the services of eleven female Sanitary Officers, four of whom have, in addition to the usual sanitary certificates, certificates in midwifery. One of these officers supervises midwives, eight carry out the duties imposed by the Notification of Births Act, and two those of the Factory and Workshops Acts

Under the "Belfast Corporation Act, 1911," all midwives practising in the city must have their names entered on a roll kept by the Public Health Authorities, and must submit to certain regulations similar to those required by the Central Midwives Board in England. In 1915 there were 227 women on this roll, 116 of whom held the Central Midwives Board Certificate. They attended 4,262 births out of the 10,196 registered for the year. The cases of irregularity reported by the inspector were all of a minor nature; but 20 women were found practising without having registered, and were cautioned; while on repetition of the offence, one was proceeded against in the courts. Six cases of puerperal fever were reported during the year, with three deaths, in three of the cases midwives only being in charge. This shows a considerable improvement in the condition of affairs since midwives were brought under control. In the ten years previous to 1st January, 1912, when the new regulations came into force, the average yearly number of cases was 23, three-fourths of them occurring in the practices of "handy-women."

The eight Sanitary Officers working under the Notification of Births Act paid 26,004 visits during 1915, to 7,596 new cases and 3,149 kept under observation from 1914. They investigated 1,591 deaths amongst infants and young children, and 278 cases of still birth, and paid particular attention to the 488 illegitimate children born during the year. The usual advice and instructions were given where neither a doctor nor a qualified nurse was in attendance, and 117 cases were assisted to obtain milk by means of the Municipal Milk Fund, a fund provided by voluntary contributions. Again, many of the mothers and

babies were sent to the Babies' Clubs of the Women's National Health Association and the Belfast Health Society, in which the Sanitary Officers have always taken much interest of an unofficial nature.

III. Voluntary:—(*a*) Sectarian.

Of voluntary work, that carried on by the purely sectarian agencies may be dismissed in a few words, first, because their attention is focussed on the soul rather than on the body, and secondly, because they could not be expected to join in a co-ordinate scheme of Child Welfare, more or less *officially* organised. A considerable amount of work for mothers and children, we must recognise, *is* done by our various Missions with their house visitations by Deaconesses and Sisters of Mercy, but the body is, as it were, only incidentally of importance, though it does benefit largely by the care expended on the sick and the dying, and by the inculcation of cleanliness, thrift, temperance, and other virtues.

From this general statement two exceptions may be made:—

(1) *The Cripples' Institutes*, with which are associated the *People's Palace* and the *Homes of Rest* (Protestant). Although run on strictly religious lines, the committees of these Homes have always shown themselves ready to offer hospitality in their centrally-situated People's Palace to other workers in need of rooms. They had also at one time a creche there, to which any mothers might bring their babies; and cripple children of all Protestant denominations are admitted to the Home, from three years of age, and are taught trades. One of the Homes, situated at Bangor, is reserved for the use of mothers with children in need of rest and change. There is a small payment weekly, and attendance at "prayers" is compulsory, otherwise no questions are asked as to religious views, and mothers of all denominations have been welcomed, and look back on the week or fortnight of sea air, plentiful food, and kindly comfort for themselves and their smaller children as one of the brightest spots in their hard-working lives.

(2) Since the war the *Central Mission* (*Methodist*) has made

arrangements to receive into its Holiday Home at Whitehead little children whose fathers are in camp or at the front, and whose mothers have broken down physically, mentally, or morally, again without consideration of denominational differences. Sixty children have been received during 1916.

(*b*) NON-SECTARIAN.

It is by the agencies classified under this head that most of the work for Maternity and Child Welfare is already being done, and would be done in the future, although the Organising and Directing Centre would, in all probability, be the Public Health Committee.

These agencies fall naturally into three groups :—

(1.) Those doing *educative* and *preventive* work for mothers and children.

(2) Those occupied chiefly with work of a *clinical* and *curative* nature.

(3) A miscellaneous group of societies whose work touches on maternity and child welfare at some points.

In Group (1) we find in Belfast only three societies, *i.e.* :—

(*a*) The Belfast Branch of the *Women's National Health Association.*

(*b*) The *Belfast Health Society*

(*c*) The *Babies' Home.*

The *Women's National Health Association* established three "Babies' Clubs" in 1908, in Divis Street, York Street, and Ballymacarrett. These followed the lines of the St. Pancras School for Mothers, and from 1908 to 1914, 3,372 babies had been entered on the rolls, and had made 31,210 attendances. The cost per baby per year, worked out over a period of five years, was 1s. 8d. without milk, 3s. 8d. with milk. The extremely low cost was made possible by the fact that, with the exception of £20 a year paid to a nurse for part-time visiting, all work was honorary, premises were kindly lent at very low rents, and sufficient money was received from the mothers themselves to cover

the cost of caretakers, cleaning and heating, as well as half the cost of the milk.

In November, 1914, these three Clubs were taken over by the newly-formed *Belfast Health Society*, and the Women's National Health Association established three new Clubs, one on the Donegall Road, another in Ballymacarrett, and one in connection with a United Service Club for Sailors' and Soldiers' Wives, in Alfred Street. Another one was run in connection with another United Service Club in Sultan Street for a few months, but is now closed. Owing to difficulties in securing suitable premises and frequent "moves," only 200 new babies were added to the *Women's National Health Association* rolls during 1915, but the *Health Society* records in its report for the year an addition of 900 names.

The net result of this work is that there have been seven and are now six Babies' Clubs open in six different localities in Belfast, five on one day in the week and one on two days. The work carried on in them is the usual work of Baby Consultations and Schools for Mothers. A medical woman attends the Women's National Health Association Clubs, and a nurse those of the Belfast Health Society, the latter being the only paid worker. Each Club has its own Voluntary Lady Superintendent and staff of voluntary lady workers and visitors.

The Babies' Home.

This was begun as a branch of the Children's Aid Society, but is now carried on by an independent committee. In a large house with grounds on the outskirts of the city, children from birth up to two years of age are received for any length of time, on payment of an inclusive fee of 5s. weekly. The idea is to provide a safe refuge for healthy infants whose mothers are either dead, in a hospital, asylum or sanatorium, or in domestic service. Young women are also received, on payment of a premium, for training as "Nursery Nurses." This training includes the making and washing of infants' clothes, preparation of diets, and instruction by the visiting physician in the hygiene of childhood.

In Group (2) we have the various hospitals. These include:

(1) Two large general hospitals, each with special departments for Gynæcology, Skin, and Eye, Ear and Throat, and one for Dental Work.

(2) Two maternity hospitals, from each of which patients are attended in their own homes, as well as in the wards.

(3) Two gynæcological hospitals.

(4) Three children's hospitals, two with an ophthalmic department.

(5) Two eye, ear and throat hospitals.

(6) One skin hospital.

In Group (3) might be placed:—

(1) The *Sunshine Society*, a small society which has for its object the provision of short holidays, or days or afternoons in the country, for over-worked, worried people, old or young, and including mothers of families. It provides fares, board, lunch-baskets, &c., as required, and also assistance in the home occasionally to enable a tired housekeeper, or some one worn out with long nursing, to go away with a clear mind.

(2) The *Girls' Club Union*, which forms clubs for girls leaving the elementary schools and going to work, where they are drilled and taught needlework, and various other useful and amusing crafts. Not only does this have a direct effect on the very women who in a few years' time will be bringing up their little children, particularly in the direction of inculcating discipline and self-respect, but actual lessons in mothercraft and the hygiene of home life are being introduced in several clubs.

(3) The *Civic Union*, which, amongst its other activities, equipped, and provided caretakers for, a playground on a plot of waste land in a central district. Unfortunately, at the beginning of the war this had to be given up for a drill ground, and a plan which the Union had persuaded the Corporation to consider for the establishment of similar playgrounds in various parts of the city, had to be abandoned.

One small playground is, however, provided in the Ormeau Park, one of the park-keepers being deputed to watch over it.

(4) *The Society for Providing Nurses for the Sick Poor*, now in its forty-second year, which has always loyally carried out the wishes of the founder of modern-nursing, that nurses should act as pioneers of hygiene, cleanliness and temperance, and should ever keep before their minds the duty of safeguarding health as well as of caring for the sick.

(5) *The Play Centre for School Girls*, where the future mothers are protected from the dangers of running wild in all weathers on the streets, and are taught to make their own garments, as well as singing, drill and games.

In this brief sketch of the agencies at work in Belfast (a detailed and classified list of which is appended) which bear directly or indirectly on the welfare of mothers and of children under school age, I have not referred to the work of such institutions as *Barnardo's Homes*, the *National Society for the Prevention of Cruelty to Children*, the *Salvation Army*, &c., whose field is the United Kingdom; nor have I referred to those societies whose work is specifically for children of a greater age, such as the *Dental Clinic for Elementary School Children* and the *Industrial National Schools*, where children are fed and clothed as well as taught; nor to the official work done by the *Corporation Committees* appointed to work the Children Act, supervise street trading, &c., and by the *Juvenile Labour Exchange Advisory Committee*, with its "After-care Committee" and staff of voluntary visitors to the children's homes, which again are in the main concerned with older children.

It will further be noticed that there is no mention of *Day Nurseries*. These have been tried both by employers of female labour and by philanthropic societies, but for some reason have not proved popular with our mothers, and have had to be abandoned, though it is hoped that one of the most successful ones—that run at the People's Palace for a number of years—may be resuscitated shortly. Creches maintained by employers are always suspect, and those run by "charity" are unwelcome to the majority of our hard-working women, who are extremely independent, and, moreover, conservative of old customs. The result is that hundreds of babies and little children are still left

daily in the care of very inadequate "minders"—old grannies past minding anything, or little girls, mere children themselves. Moreover, it not infrequently happens that a widow is unable to take regular, well-paid work, and is obliged to take badly-paid home-work, or to go out "charring" at houses where she can have her child with her, for want of a safe place to leave it.

Meals for expectant and nursing mothers have also been tried—by the Women's National Health Association—and have been given up for lack of appreciation.

Milk is, however, supplied both to nursing mothers and to babies at the Babies' Clubs of the Women's National Health Association and of the Belfast Health Society, and through the Public Health Committee voluntary fund. In the Babies' Clubs every effort is made to secure that this milk is in a clean, non-tuberculous condition, and to have it supplied to the homes in stoppered bottles, the mothers paying part of the cost; but no attempt has yet been made to establish a *Milk Depot* for the provision of measured, graded, or modified feeds.

Such, then, being the present condition of Maternity and Child Welfare work in Belfast, the question naturally follows: "Do these means and methods attain the desired result? Are our mothers and children as healthy as could reasonably be expected?"

To answer this question as regards the children we turn in the first place to the index afforded by the death-rate of those under one year of age. The figures for this death-rate for the ten years from 1906 to 1915, both inclusive, run as follows:—143, 135, 147, 138, 143, 128, 129, 144, 141, 137. Grave as these figures are in themselves, they are even graver in their sequential relationship, showing, as it does, a complete absence of any tendency towards a steadily progressive decrease. This aspect comes out very clearly when we compare the phthisis death-rate for the same years:—2.7, 2.5, 2.3, 2.3, 2.1, 2.1, 2.0, 2.1, 2.1, 2.0—and note the steadiness of the fall, small as it is. The general death-rate, though still high, has also decreased, on the whole regularly, from 20.1 in 1906 to 17.9 in 1915.

If to the deaths occurring during the first year of life we

add those for children of one to five years of age, we find that the total is considerably more than one-fourth, indeed, if still births be added, over one-third of the total deaths at all ages—the figures for 1915 being 6,971 deaths at all ages, 2,171 under five years, and 278 still births.

Taken in conjunction with a regularly and rapidly falling birth-rate, from 31.0 in 1906 to 25.3 in 1915, these figures at least give occasion for serious thought.

Unfortunately, there is no medical inspection of school children in Ireland, so that we have no statistical information as to the conditions of health prevailing among the survivors. An examination of several hundred school children undertaken six years ago for the Children's Aid Society, and having for practical result the establishment of a Dental Clinic, tended to show, however, that physical conditions were very much the same as those found in the English cities. Taking, then, all these facts into consideration, there can be little doubt that a further extension and co-ordination of energy in dealing with the problems of child life is as urgently necessary in Belfast as it has been found elsewhere.

The problem of maternal welfare is more difficult to state accurately. We have not the necessary figures at command. We find, for example, that the deaths attributed to pregnancy, labour and the puerperal state are very low—in 1915 only 28 for 10,196 cases of live birth and 278 still births. But no one, I think, will contend that these 28 deaths give us the least help in estimating the morbidity rate for these conditions. Nor are hospital records much more useful. The patients attending our maternity hospitals will certainly show a much lower rate of morbidity than those having less skilled treatment at confinement, while those attending our gynæcological departments will, on the one hand, show a high percentage of illness attributable to childbirth, and on the other can only be reckoned as representing that portion of our indigent female population whose sufferings are sufficiently marked to drive them to seek relief. To these difficulties we must add the absence of all accurate information as to the prevalence of miscarriage. But

our hospital records will at least indicate the nature of the disabilities from which our women are liable to suffer. My own experience, based on fifteen years' work in the wards and out-patient department of the Ulster Hospital for Women and Children, and eight years' work at the "Babies' Clubs" of the Women's National Health Association, is that the great majority of the ailments are of a minor nature, mostly due to ignorant methods of living, but quite often to sheer inability to live reasonably under existing social conditions. The effect of poverty is particularly marked, because much of this ill-health could be prevented by early advice, and especially during pregnancy, by rest and freedom from anxiety. We do so in fact prevent it amongst our private patients, not only to their very great personal advantage, but to the advantage of the coming generation. Minor as these evils are, neither threatening life nor causing permanent invalidism, they do most emphatically impede living; they add enormously to the burden, already sufficiently heavy, of bearing and rearing children. Their effect on the "nature" of the unborn child is admitted; the effect on the "nurture" of the other children can hardly be less great, if the mother has no energy left beyond the provision of the bare necessities of life, no energy for the promotion of comfort, of happiness, of all the higher parts of home life, but is only thankful if she can contrive to "carry on" from day to day. And the saddest part of all is that though preventable, they are practically incurable. Out-patient work at present seems to be chiefly an endless endeavour to palliate continually recurring evil. The marvel is that we can still be content to expend so much skill and energy, time, patience, and money on tinkering at results rather than on striking a blow at causes.

It is true that the causes of maternal ill-health, of infant mortality, and of physical deterioration are as yet far from thoroughly well known. We can point to poverty, to intemperance, to bad housing, &c., as factors of causation, but there is very much as yet unexplained even about the apparently obvious. Much work needs to be done before these factors can

be given a definite final value, both absolute and relative; and can be so defined as to render individual observations comparable with each other.

An inquiry into the conditions prevailing in Belfast in respect of the most usually accepted influences on infant mortality, tended perhaps as much to reveal these difficulties as to throw light on the situation. Replies were received from fourteen dispensary districts out of the fifteen into which Belfast is divided.

Five described the *general sanitation* as good, five as very good, three as fairly good, and one as "improved."

There was a general consensus of opinion that *insanitary houses* were either very few or non-existent.

Intemperance was said to be prevalent or considerable in seven districts, and "usual" in another; while *poverty* was not considered to be marked in any district but one, though in three "some" was spoken of as present and due to intemperance; drinking habits among women were only referred to in three districts.

To the request for "*general observations on circumstances affecting the physical welfare of mothers and children*" one made no reply; ten gave women's work in mills and factories as the outstanding adverse factor, six treating it as the only factor, and four in association, two with intemperance, one with overcrowding, and one with over-lactation. Two referred to poverty due to intemperance, and one to over-lactation only.

But the nine replies to a question as to *the proportion of infants breast-fed during the first months of life* illustrate more clearly than any the difficulties besetting such inquiries. Five answers were returned in the form of figures—*i.e.*, 50 per cent., 75 per cent., 80 per cent., 90 per cent., 95 per cent.—obviously varying with the character of the district; one said "a good number"; one, "nearly all"; one, "the great majority except in the case of illegitimate children, and mothers out working"; one, "the majority," adding that "mixed bottle and breast-feeding was unsatisfactory." An inquiry into this subject by the female sanitary officers of the Public Health Committee

gives the following figures for 1915. In 6,830 cases of legitimate babies, 4,718 were entirely breast-fed, 662 artificially fed, and 1,370 were on bottle and breast during at least their earliest months. For the 488 illegitimate cases, 206 were on the breast, 163 on the bottle, and 111 on both. My own experience in our Babies' Clubs would lead me strongly to endorse the view that over-prolonged suckling was almost, if not quite, as great an evil as bottle-feeding, and far too prevalent in our midst.

How, then, may these varied observations be summed up? In the first place, I think we may fairly say that Belfast is free from the worst forms of slums. Tenement houses are practically non-existent, and back-to-back houses are now very few. The majority of our workers' houses are technically satisfactory, though it is always open to question whether a family can really be healthily brought up in a kitchen and two or three bedrooms, with cold water laid on to a sink in a dark scullery for provision towards cleanliness, and in too many houses an open grate still the only provision for cooking.

Further, in spite of the increasing density of population, Belfast is still exceptionally open to the country. There is no part of the town from which older children and adults cannot easily reach open fields, river, lough, or mountain side, while our seven large parks bring fresh air and space in reach of practically every one, situated as they are near to our more densely populated neighbourhoods. They are very largely availed of by children of all ages, and this to some extent compensates for the absence of playgrounds from most of our schools.

Intemperance is unfortunately a marked feature of our daily life. But it may be noted here that on the whole the maternity benefit is not used for drink. There are, of course, many cases where it is so abused by both husband and wife, but the majority of women secure it from their husbands and use it for household needs, though not perhaps those contemplated by the Act. As I understand it is very often used for rent, which is allowed to fall into arrears during the last weeks of pregnancy in view of the definite security of the benefit. But if this means that the mother is relieved at this time from one of the most pressing

anxieties of the poor, and that a few shillings weekly are set free for more food, we can hardly say that the benefit is entirely misapplied. More especially is this so when we bear in mind that the majority of our working people are undoubtedly insufficiently fed. There are few cases of actual starvation in our midst, but one is tempted to say that there are perhaps almost equally few who take really sufficient food, or at least food of sufficiently nourishing quality. This is especially true of the women, of the mothers above all.

Poverty is not so marked, but wages are low. Before the war a labourer's pay was from 18s. to 22s. a week. More highly-paid work is frequently irregular, a period of much overtime and big wages being succeeded by a period of nothing to do but wait for a new job. This is naturally destructive to all habits of steadiness and thrift. Women are tempted to fill in these periods, or to supplement the low wage, by returning to the mills and factories in which most of them worked before marriage. But more evidence is required before we can differentiate between ill effects on health due to married women's work, and those due to the conditions necessitating the work. The work of unmarried women, plentiful and comparatively well paid, is also open to question, as it certainly leads to early and improvident marriages. Even if we were prepared to endorse John Burns' statement, made in 1906, at the First National Conference on Infant Mortality, that married women's work is "an individual mistake, a social tragedy, a communal blunder," we should show our wisdom more in devising means to mitigate its evils, than by attempting to impose limitations on what we must regard in 1917 as its inevitable increase. In this connection it is interesting to note that the Health Report for 1915 gives 9.5 per cent. of the deaths of infants under one year as due to causes affecting the mother and child before its birth, but expressly states that " many of the cases of still birth were found to have occurred amongst persons in fairly comfortable circumstances." Debility, bronchial and digestive affections are as ever the three great enemies of our infant life, between them accounting for 1,005 deaths out of 1,381 in 1915 . And how the blame for

these is to be divided between environment, women's work and wrong feeding, who shall as yet determine? Other cities with worse social conditions have lower infant death-rates. Breast feeding *may be* as faulty as bottle feeding, and can hardly be maintained to be the happy solution of all difficulties in the way that at one time seemed to be suggested.

Considering, then, all these facts, can we attempt to account for our high infantile mortality? Each one will deduce from them an answer according to the bias of personal experience. My own conviction is that *ignorance* is *the* factor of importance. Under simpler conditions of living it is possibly less actively hostile. Under the complicated conditions of city life it becomes dominant in its power for evil. And no one will deny that our women and our men are pitifully ignorant of all that pertains to healthy living. Nor have they been educated in such a way as to make it easy for them to grasp new ideas. The fault is not theirs. It is primarily in the nature of our elementary education, and secondarily in the absence of nearly all the machinery for teaching practical hygiene in later life. The teaching to be obtained from lectures and books is too abstract; the practical directions given by doctors are generally too hurried and dogmatic; moreover, they lay the emphasis in the wrong place, on the sick rather than on the healthy, on the abnormal rather than on the normal. Almost alone our six Babies' Clubs give the only teaching that is likely to bear fruit. In them week after week the mothers are taught by patient repetition what makes for health, and taught it with their own children to focus attention, their ups and downs to illustrate and drive home the lessons to heart and brain. Six such centres are miserably inadequate for a city the size of Belfast. Moreover, their work suffers for lack of co-ordination with the Public Health Service and the hospitals. There is too little combination of effort, so that much fails for want of mutual support, and there is waste by overlapping.

There is a scheme at present under consideration, by which the Public Health Committee would take over the existing Babies' Clubs, and establish several new ones, as " Maternity

Centres." This would obviate many difficulties. The present voluntary workers would remain in charge of the clubs, but one or two of the Female Sanitary Officers would be attached to each, and would be chiefly responsible for the home visiting. That combination of voluntary and official work would thus be obtained, which is likely to prove most valuable in Child Welfare work. The confidence and respect which the mothers already have for the Babies' Clubs would be retained, and could, I feel sure, be made to overcome the unpopularity of Day Nurseries if these were run in connection with the centres. The Lady Superintendents might well undertake to visit such nurseries regularly, and their voluntary workers might share in the duties by helping to bath, feed or play with the children by turn.

Ante-natal clinics are to be established under the scheme, as soon as possible. Mothercraft classes will follow when suitable rooms have been obtained; playgrounds, both open air and under shelter, might be considered; and a milk depot, which might also serve the Children's Hospitals and Babies' Home,would soon be found a necessity. Indeed the closest co-operation should be maintained with the hospitals, and the rights of private practitioners must, of course, be strictly guarded. It would be no difficult matter in Belfast, I believe, to enter into an arrangement by which, when sick children or women were referred to doctor or hospital, their accurately kept history sheets could be forwarded at the same time for the doctor's information, to be returned by him, endorsed with his directions and advice for the guidance of those in charge of the centre. This would have the added benefit of keeping the centre to its primary object of safeguarding the healthy rather than of prescribing for the sick, of educating rather than of treating. If necessary, children's clinics could eventually be also established, but our hospitals are numerous and adequately equipped, and every emphasis should be laid on the fact that Maternity and Child Welfare work is before all things educative and preventive. And educative not only for the mothers themselves. The centres should be open to social workers of all kinds who

wish to study the hygiene of childhood. Above all midwives and health visitors should be encouraged to attend regularly, rubbing up their own knowledge, and contributing their experience and knowledge of home conditions, to the general stock. In this way teaching and practice would tend to become unified over the city, and safety might indeed supplant the dangerous confusion which is at present too frequently the unhappy result of a multitude of counsellors.

Preventive work must begin with the individual in the home. But home visiting alone to some extent fails to do all that is required. The active co-operation of the mother must be secured, and the weekly effort that must be made to attend a centre is an invaluable stimulus and incentive to real endeavour.

But to be of any lasting use it is essential that the centres shall be attended regularly by doctors with very special qualifications for the task. The teaching and directions there given must be clear, reasonable, and above all authoritative, and there must be a fund of enthusiasm which slowness of result can neither tire, nor reduce to jog-trot rule of thumb. Otherwise there will be failure. Voluntary workers, sanitary officials, and mothers must go to the centre with implicit confidence that their difficulties will there be lessened by the best possible advice, and they should leave it with ever renewed interest in the phenomena of child life, ever fresh vigour to meet its trials.

In some such scheme and form of work as this lies, I am convinced, the best chance of improved health and happiness for our future citizens.

CLASSIFIED LIST.

I. ACADEMIC.

The Queen's University.

II. OFFICIAL.

(*a*) Poor Law Guardians.
(*b*) Public Health Committee of Corporation.
(*c*) Children Act Committee of Corporation.
(*d*) Juvenile Labour Advisory Committee.

III. VOLUNTARY.

A. Sectarian.

(*a*) Cripples' Institutes, People's Palace, and Homes of Rest (Bangor).
(*b*) The Central Mission Home, Whitehead.

B. Non-Sectarian.

I. Educative.

(*a*) Women's National Health Association—

(1) Donegall Road Babies' Club.
(2) Alfred Street ,,
(3) Ballymacarrett ,,
(4) Sultan Street ,, (now closed).

(*b*) Belfast Health Society—

(1) Divis Street Babies' Club.
(2) York Street ,,
(3) Newtownards Road ,,

(*c*) Babies' Home.

II. Clinical.

(*a*) *General* Hospitals, for Men, Women and Children—

(1) Royal Victoria, 300 beds and out-patients.
(2) Mater 150 ,, ,,

(*b*) *Maternity* Hospitals—

(1) Townsend Street, 30 beds and attendance in homes.
(2) Ulster 2 ,, ,, ,,

(*c*) *Gynæcological* Hospitals—

(1) The Samaritan, 25 beds and out-patients.
(2) Ulster, 10 ,, ,,
(3) Townsend Street, out-patients only.
(4) Royal Victoria, special ward and out-patients.
(5) Mater, ,, ,, ,,

(*d*) *Children's* Hospitals—

(1) Ulster, 32 beds and out-patients.
(2) Queen Street, 45 ,, ,,
(3) Royal Victoria, The Throne—a special branch department in the country.

(*e*) *Ear, Eye and Throat* Hospitals—

(1) Ophthalmic, 30 beds and out-patients.
(2) Benn, 30 ,, ,,
(3) Ulster. For children only—beds as required.
(4) Royal Victoria—Special department.
(5) Mater ,, ,,

(*f*) *Skin* Hospitals—

(1) Glenravel Street.
(2) Royal Victoria—Special department.

(*g*) *Dental* Hospitals—

(1) The Mater—Special department.
(2) The Dental Clinic—Children from 6–10 years only.

III. Miscellaneous.

(1) The Sunshine Society.
(2) The Girls' Club Union.
(3) The Civic Union.
(4) Nurses for the Sick Poor.
(5) The Play Centre for Schoolgirls.
(6) Dental Clinic for Elementary School Children.
(7) Industrial National Schools ("Ragged" Schools).

(*a*) Lancaster Street.
(*b*) Barrack Street.

REPORT ON MATERNITY AND CHILD WELFARE IN CORK COUNTY BOROUGH.

By Alice Barry, M.R.C.P.I., D.P.H.
(*Medical Superintendent, Child Welfare Work, Women's National Health Association.*)

The deaths of infants under one year in Cork City during 1915 numbered 235, being at the rate of 132 per thousand births, the average for the past ten years being 130 deaths per thousand births.

The steadiness of this high death-rate indicates the existence of evil conditions in the home life of the people. It is an index of social evil.

In considering the existing ways of dealing with infants and children under five years, we may roughly classify them into two large groups:—

(*a*) Those who come under the Poor Law, and
(*b*) Those who do not.

(*a*) Those who come under the Poor Law:—

(In this connection one must remember the prejudice shown by the respectable poor in making use of a workhouse unless the hospital work there is exceptionally good.)

These children may be divided again into three classes:—

(1) Children admitted to the workhouse.
(2) Children boarded out.
(3) Nurse children visited by Inspector under the Children Act.

1. *Children admitted to the workhouse are either illegitimate children, deserted children, orphan children, legitimate children of ill-conducted parents, or legitimate children suffering from acute illness.*

The death-rate amongst illegitimate children, or deserted children, is usually high, owing chiefly to conditions previous

to admission. Within the last year a very fine children's hospital has been built in the workhouse for the treatment of all children from three to fifteen years. Here modern expert treatment is available, and the mortality rate very low. It would be advisable that the age limit of this hospital should be lowered, and children over one year old admitted.

2. *Boarded out Children.*

These are children whose parents have died, or have deserted them, and who are boarded out by the guardians to suitable women. Cork may well be proud of its Boarded-out Committee of voluntary workers, who meet every month during the year to enquire into the home conditions of applicants for these children, and who hold a special meeting during the summer months, at which all boarded-out children must attend, accompanied by their foster-parents. The resident medical officer of the workhouse generally attends this meeting, and the children are examined for physical defects; special attention being given to their teeth, and prizes are given for the best cared-for children.

The system works excellently, and if it could be extended to illegitimate first-born children, after the nursing period, it would remedy a great evil.

3. *Inspection of Nurse Children by Inspector under Children Act.*

There is one inspector appointed by the Poor Law Board in Cork, and she would require an assistant, who should be a trained nurse. Great difficulty is experienced in tracing the women who take nursing children; though they are obliged by the Act to notify on receiving the child, they do not do so. The compulsory notification of births which is now in force ought to help very much in this matter. The home conditions of most of these women are totally unsuitable, and the majority of these babies die, and go to swell the heavy infant death-rate. It is not enough to make it compulsory for a woman to notify when she receives a nurse child. It should be made an offence for her to take a child unless she has a certificate as to her capacity as a nurse, the fitness of her home surroundings, and she must also

have an assurance of regular payment. These women willingly, on the receipt of a pound, take a child, but when no more money is forthcoming at the end of a few weeks, it does not require much imagination to realise how the infant will be treated in a large majority of cases.

(*b*) For children other than Poor Law, the following hospital accommodation is provided :—

1. *Victoria Hospital* . .	Which has twenty-five beds for children, but only a limited number are free, as the majority are subscribed for by certain districts in the country. There is also an out-patient department every morning of the week, which is open to medical students.
2. *Mercy Hospital* . .	In connection with this hospital, a children's wing has recently been built with accommodation for eighty children but, unfortunately, owing to the War, the building is not completed. One ward is finished, and is used at present for wounded soldiers. A very small outlay would complete the other.
3. *North and South Infirmaries*	Receive accidents and urgent cases, and never refuse an urgent case, but no special provision is made for children.
4. *North Fever Hospital* .	Has an average admission of 200 children in the year. There also is an Isolation Hospital in connection with Fever Hospital, which contains forty-five beds. This building could be converted into a children's hospital.

The Cork Corporation contributes annually to the following hospitals :—

Fever Hospital . . .	£1,200 to £1,300 per annum (maintenance).
North Infirmary . . .	£700 per annum (maintenance)
South Infirmary . . .	£700 per annum (maintenance).
South Infirmary . . .	£77 10s. 10d. per annum (half rent of Infirmary).
South Infirmary . . .	Half cost of annual repairs (varies) (£164 13s. 6d. for the financial year ending 31st March, 1916).
Mercy Hospital . . .	£100 per annum, which the Lord Mayor provides out of his own salary.

There are in Cork two Maternity Hospitals :—

The Erinville . . .	Which has an intern and extern department. During the year 1915, 238 patients were admitted, and 229 were attended in the extern. There was no maternal mortality in the extern. In the hospital two maternal deaths, one being eclampsia, the other due to embolism. The infant mortality was 17.
The Cork Maternity . .	As a rule does not receive patients in the hospital, but it has a large extern department. The figures for 1915 are not available.

Both hospitals cease attending patients on the eighth day.

Since the compulsory notification of births a lady Sanitary Inspector visits the homes on receiving notification. She advises the mother, and inspects and reports on the surroundings, but as there is only one lady Sanitary Inspector appointed by the Corporation for the whole city, this is very inadequately done.

There are three district midwives for the city, and seventy midwives practising privately. These latter are under no supervision, and a case has come to my notice of a midwife who receives patients into her house, as well as visiting patients in their own homes. One of the patients in her house developed puerperal fever. A doctor was called in, the case notified and the room disinfected, but during the whole time the midwife attended not only her other patients in the house, but her outside patients as well. The law compelled her to have the room disinfected, but there was no power to take her off duty for a specified period.

If the Inspection of Midwives Act was in force such a thing could not happen.

Luckily, ophthalmia neonatorum is very rare, otherwise, who could put bounds to the damage that might be done owing to the lack of proper supervision.

The Corporation have also appointed a Veterinary Surgeon as Dairy Inspector, who regularly reports his inspection of the cowsheds in the urban district. During the year 1915, supervision was exercised over 519 registered dairies, cowsheds, and

milkshops in the city. There are also a Veterinary Surgeon and a Dairy Inspector for supervising the cowsheds, &c., in the rural area.

Voluntary Associations.

The National Society for the Prevention of Cruelty to Children has a very creditable record in Cork, having investigated 456 cases of children under five years during the year 1915; the total number of all children who have passed under their hands being 1,129, with only nine deaths. All cases were emaciated, and showed signs of neglect. As an instance of what care can do, I may instance one case which came under the Society of a child fifteen months old. The mother was sent to jail for neglect, and the doctor who was called in expected the child would only survive a few days. A woman from the same house, but of a different disposition, got charge of the child, and now, six months later, the child is above the average in every way.

The Police-Aided Children's Clothing Society distributes clothes to deserving poor children. Each application must be made through the local constabulary.

The St. Vincent de Paul Society, the Sick Poor Society, the Coal Fund Committee, and the Penny Dinner Committee do excellent work, and all help the poor generally, but they do not make any special provision for nursing or expectant mothers.

A Mothers' and Babies' Club was established under the auspices of the Women's National Health Association, and during its existence did good work, but for want of means to keep it going, the Club had to be closed down. In connection with this Club there were cooking classes, sewing classes, classes for little mothers, also a dental clinic.

A Creche also existed in Cork, but this also has ceased work for financial reasons.

Probable Causes of the Heavy Infant Mortality.

Poverty has a great deal to do with this heavy death-rate. The average workman's wage is 18s. a week, which at its present

value is totally inadequate to feed or clothe the workman's family of from five to ten children. The rent varies from 2s. 6d. to 4s. 6d., and the next big item is bread. A family consisting of five or six children would eat 1s. worth of bread a day. Potatoes are impossible now, and are not mentioned in the dietary scale. Coal is another large item, about 3s. worth being used in the week. Tea and sugar are used at every meal, and come to about 3s. a week. There is among the poor the strongest prejudice against margarine; butter preferably, and if not, dripping will be used by any family who can afford it, and margarine only as a last resource.

Bad as is the case of the workman's family, that of the respectable clerk is worse. I may quote as an illustration of this a family which came under my notice recently. The father, a clerk earning £1 a week, who has to keep himself respectably dressed, got married to a capable girl with a good knowledge of housekeeping. They have now two children, the elder a year and three months, the younger two months. The mother is wasted and prematurely aged, The elder child is fairly healthy, the younger a fragile, fretful baby requiring care and nourishment which cannot be provided. The following is their average weekly expenditure:—

	s.	d.	
The husband keeps	0	6	for tobacco, &c.
Rent . . .	2	6	provides one good room and a smaller one, both kept clean
Coal . . .	2	6	
Bread or potatoes	5	0	
Cheese . .	0	6	
Meat . . .	1	0	for Sunday's dinner
Tea and Sugar .	2	0	
Butter . .	2	0	won't use margarine
Milk . . .	3	0	mother realises necessity of milk and gets three pints a day
Patent barley .	1	0	for the delicate baby, now given up as the baby did not thrive on it

This leaves no margin for clothes or other incidental expenditure, and yet they keep up a decent appearance. It is said that no one knows how the poor live, and only that the poor are so good to one another they could not exist. In this particular case a kind-hearted mother-in-law is the great stand-by.

Milk is hard to obtain at present, but even if plentiful there is such great ignorance of the ordinary laws of hygiene that its scarcity does not make much difference. Bottle-fed babies are not numerous, but when bottles are used they are never thought of until required, and oftentimes a little milk and water is added to what was left after the last feed.

Ignorance, and what I shall call conservatism, play an important part in infant sickness and death, not only amongst the very poor, but also amongst the better educated. It is no uncommon occurrence to be told by a woman that she had six children, four of whom are dead, one is fairly healthy, and one is ailing. On inquiring the cause of death, one is told stomach decline or convulsions, and further inquiry elicits the fact that these deaths are due to bad feeding, and also the fact that the ailing baby is being fed on the same system, and likewise following its predecessors' footsteps, although the mother had been warned of the danger of the bad feeding, and yet the mother is fond of the child.

Another case was recently admitted to one of the city hospitals from the country—a baby whose parents were of a more respectable class. The child was suffering from dyspepsia due to consumption of excessive starchy food. On proper diet the symptoms rapidly disappeared, and the child was sent home well. Strict instructions were given to the mother with regard to diet; a month later the mother wrote urgently for the doctor, and said the child was very ill again. The child was again admitted to hospital, and found to be suffering from its previous complaint—too much starch. The child got better in hospital, went home, the mother being again warned to be most particular, and follow instructions. In the course of a few months the child was back again as bad as ever, and is now again re-

covering under treatment in hospital. These instances could be multiplied indefinitely.

Bad hygienic conditions, overcrowding, and insanitary surroundings certainly swell the death-rate. A large number of infant deaths are due to epidemic diarrhœa caused by contamination of the milk and food by flies, which swarm during the hot months about the living rooms of the houses. 101 cases of this disease were notified during the year 1915, and it was found that overcrowding existed in 77 cases, and in nearly every case the house and surroundings were filthy. The number of deaths from epidemic diarrhœa in children under one year in 1915 was 43; over two years six children died of this disease.

Married Women Workers.

Owing to the poor wages of the husband, numbers of married women must work to eke out the family livelihood. These women generally do any casual work such as charring. As a rule they continue this work until a very short period before the baby's birth, and they resume work a fortnight, or, at latest, three weeks after. Since the war, the large number of soldiers' and sailors' wives who are receiving separation allowance are, in comparison to the working-men's wives, very well off, and insurance societies have noticed that large numbers of insured women have dropped out of their books on this account.

The 30s. insurance maternity benefit was, in the early days of the Insurance Act, paid to the husband, but now approved societies must pay the benefit to the wife. It is difficult to say what use it is put to, but it does not seem to be badly used on the whole. Some societies, if they have reason to believe that good use will not be made of the money, pay it in four weekly instalments of 7s. 6d. A hospital fee of 5s. is stopped in all cases where the patients are attended by nurses from the Lying-in Hospital and Cork Maternity Hospital.

In analysing the reports from doctors of the Cork Urban

Dispensary Districts, one is struck with the unanimity of the conditions existing in the different districts:—

Sanitary conditions—Reported fair in all districts.

In groups of causes of infant mortality:—

1. Bronchitis and pneumonia head the list in all.
2. Diarrhœa and enteritis come second,
3. Convulsions third.
4. Measles and whooping-cough fourth,

And premature births placed by all fifth or sixth, and in one district reported very rare.

Number of still births—2 per cent. from all districts, except one which reported 3½ per cent.

Breast-fed infants—70 per cent. to 90 per cent.

Married women workers—Not numerous, only work when compelled by poverty..

Suggested Recommendations.

1. Establishment of a Baby Centre.

At present a Tipperary Club is working in Cork, run by a committee representing all creeds and classes for the benefit of the wives of soldiers and sailors. There is a possibility of utilising this Club as a Child Welfare Centre.

2. Increased number of health visitors or women sanitary officers.

One is totally inadequate, as systematic and constant home visiting plays a most important part in any scheme for reducing infants' deaths. The mothers are conservative, and it is only by constant repetition and strict supervision that any effect can be produced.

3. Inspection of midwives urgently needed.
4. Arrangement for clinic for expectant mothers.

5. Skilled attention to temporary teeth in children.
6. Distribution of leaflets from children's hospital or Child Welfare Centre.

In connection with children under the Poor Law, it would be advisable :—

1. That an assistant trained nurse to help Inspector under Children Act should be appointed.
2. That illegitimate first-born children should be included under the boarded-out scheme.
3. That power should be given to remove children from parents who are beyond reform.

MEMORANDUM ON MATERNITY AND CHILD WELFARE IN IRELAND.

By Prudence E. Gaffikin, L.R.C.P. & S., Edin.

(Honorary Medical Officer, Women's National Health Association; late School Medical Officer, Enfield, &c.)

The problem of infant mortality in the Irish cities is a complex one, and no sweeping generalisation as to causes can be made, for they vary with the locality and the people, though, from considerable experience, I think the underlying causes are varying manifestations of the same personal factors modified by differing environment.

It is not exclusively a matter of poverty, for extreme poverty is not common in Belfast, for example, where there is abundance of work, and yet the infant mortality rate there sometimes approaches that of Dublin or Cork, where conditions of very great poverty are frequently to be observed.

Neither is it solely a question of the industrial employment of mothers. Thousands of the Belfast women work hard in the mills and factories, while there is very little work for women in the southern cities. Yet when the infant death-rate does vary between north and south, it is in favour of the woman-working north.

Housing is an important factor, doubtless, and the terrible one-room tenements of Dublin are beyond the pale of decency, but if bad housing conditions had the effect on infant life which one would expect, the disparity in the infant mortality rates of Dublin and Belfast would never diminish, for in Belfast tenement houses and one-room dwellings are not found in any number. Although there is a considerable difference in the infant death-rates of the two cities in 1915—160 and 137—we find in the previous year a much closer approximation, viz.:—156 and 141 per thousand births, and in some years the rates are almost identical.

All these figures are far too high, and although housing and the other factors spoken of may account for the fact that the Dublin infant mortality rate is in excess of that of Belfast, it seems obvious that there must also be some deeper common cause.

There is no doubt that Irish women are very fond of their babies—are devoted mothers to their infants with the instinctive animal mother love for the new-born and helpless. Nevertheless, I have not found them such devoted, or such careful mothers once extreme infancy is passed, and in dealing with the child, they are guided merely by instinct and inherited tradition. In many parts of Ireland families are very large, and yet the coming of another baby is not resented. If a woman bears 18 or 20 children, and 12 of them die from sheer inanition —well, life here is but a prelude to the world to come, and if the prelude for the baby is short and sharp it has at least gained the boon of everlasting life. Neo-Malthusian and even Eugenic doctrines are considered wrong, and the breaking of the sixth commandment by bringing life into the world *only* to die has not yet been brought home either to man or woman.

In other parts of our country families are smaller, but there is greater carelessness. Infant life is held cheap, and the working-girl mothers have not been taught about motherhood or even mothercraft. Working-class mothers of families teach their girls deplorably little domestic lore. Quite often girls of marriageable age have never bought either household necessities, or so much as a gown for themselves. The mother does all the shopping and housekeeping, and there is no such autocratic rule as that of a working-class house mother!

So far as my experience goes, there is in Irish cities a vicious circle of factors conducive to infant mortality, a circle which runs round from ignorance and helplessness to despairing fatalism, either by way of apathy or of carelessness. The ignorance may represent a complete undevelopment of all faculties higher than the mere physical, or it may be only ignorance of childlife—its wants, its well-being, its very existence almost except as a possible outcome of physical passion or indiscretion.

Whether, as in the case of the non-working mother, the environment is the home, possibly only a one-roomed home, or, as in the case of the working mother, the environment is the factory, and the home too often merely a sojourning place for so many hours out of the twenty-four—a hobby or a troublesome but necessary interruption of, and added burden to, the day's work—the vital necessity is knowledge, *knowledge given in such a way that the vicious circle is broken at ignorance.* With the advent of knowledge, either actual, that is in the mothers themselves, or potential, that is in others who are willing to help and who are able to do so on account of fuller and more skilled instruction, the vicious circle will break down at helplessness, and with the collapse of helplessness, the apathy and much of the fatalism will vanish.

But our mothers and girls must be taught that it is they themselves who can best help their babies—that no amount of visitors and hospital help can do and be to the babies what an intelligent mother can do for them under skilled guidance. It is not enough just to visit the tenements and workers' houses and give advice and a food ticket. The mother must be roused to an intelligent sense of her responsibilities, and given a larger and fuller grasp of life. She must be taught to take care of herself, of the unborn child, of her house, household utensils, and surroundings; taught the different values of foodstuffs, and taught also that life is more than existence, and that one does not live by bread alone. To secure this the mother must be brought out of her home as well as visited in it—for thus she may come to realise that the work necessary for her child's welfare must be done by herself —others can but help.

While dispelling ignorance among the mothers and girls is the main road along which we may expect success to come, we must not overlook the fact that a patient seeking out of all the important factors in the causation of this lamentable national loss is also necessary for a complete success.

The conflicting claims of environmental and of hereditary causes, of the remote and the immediate causes, are very baffling. And there could be, I think, few greater services to

the State than the initiation of a thorough and scientific investigation into causes in addition to the other remedial and preventive measures adopted.

Thorough investigations, carried out with care and judgment by experienced doctors, into the causes of illness and death among infants, and checked by comparison with the causes of good health and vigour, even in a limited number of cases in each of our cities, provided a uniform method of procedure and of tabulating results could be agreed on, would, I believe, go far towards solving some at least of these constantly recurring problems. This would at least be a step in the direction of evolving order out of the present chaos of opinion as to the causes of infant mortality.

APPENDIX

34 M.—1916.

Miscellaneous.

LOCAL GOVERNMENT BOARD,

DUBLIN, *8th June*, 1916.

MATERNITY AND CHILD WELFARE

SIR,

I am directed by the Local Government Board for Ireland to advert to their Circular letter of the 17th August last drawing attention to the operation of the Notification of Births (Extension) Act, 1915, under which early information concerning all births in Urban Districts is required to be given to the Medical Officer of Health. In addition the Act contains provisions enabling local authorities to make arrangements for attending to the health of expectant mothers, and nursing mothers, and of children under five years of age. In view of the considerable incidence of Infant Mortality in Urban Districts in Ireland, the problem of protecting infant life is one which deserves the serious attention of local authorities, and the fact that a grant of £5,000 in aid of approved schemes for Maternity and Child Welfare has been included in the Estimates to be submitted to Parliament will no doubt serve as an additional inducement to practical action being taken for dealing with this important matter.

A copy of the Regulations prepared by the Board for the distribution of the Grant is appended hereto.

OUTLINE OF SCHEME.

The Board recognise that the scope and organisation of schemes for Maternity and Infant Welfare must vary according to local conditions, and particularly with the size of the Urban District, but the general character of a comprehensive scheme should, in the Board's opinion, extend to arrangements before, at, and after birth, and should not only include the care and supervision of children in the first year of life, but should aim at securing improved antenatal and natal conditions, as well as making provision for children up to the age of five years.

Home Visiting.—The work of home visitation is one to which the Board

attach very great importance, and in promoting schemes on the lines contemplated the first step should be the appointment of an adequate staff of qualified health visitors. At the commencement their activities can perhaps best be directed to cases in which notification of birth has been furnished to the Sanitary Authority, and through this agency it will be possible to get in touch with the cases in which attention is most needed. Subsequently arrangements for the care of older children and of expectant mothers should be undertaken. Arrangements should also be made for systematic instruction of Health Visitors in their duties.

Maternity Centres.—In the case of the larger urban areas, it would be desirable to provide Maternity Centres to which expectant mothers and mothers with infants and young children may be referred for advice and treatment. Such Centres should be under the charge of a medical officer, and qualified Nurse, and careful records kept for which the Medical Officer should be responsible.

Midwifery Facilities.—The scheme should further include suitable provision for medical and midwifery attendance for necessitous women in their confinement, not being entitled to benefit under the National Insurance Acts or in receipt of assistance from the Poor Law Authority.

Day Nurseries.—For the care of the young children of working women necessarily absent at work, Day Nurseries might, in industrial districts, be established. Definite fees should be charged to the mothers, sufficient at any rate to cover the cost of all food supplied.

ORGANISATION OF SCHEMES.

The Board consider that as far as possible each Sanitary Authority of an Urban District should undertake the organisation of a scheme of Maternity and Child Welfare for their district, having regard to the local circumstances and requirements, and in consultation with the Medical Officer or Medical Superintendent Officer of Health. It is not, of course, suggested that the Sanitary Authority should necessarily institute and control all the arrangements; on the contrary it is hoped that as a preliminary step the Sanitary Authority will get in touch with all the local associations and institutions dealing with matters connected with Maternity and Child Welfare, and will fully utilise their services. The function of the Sanitary Authority should consist in systematising, and, where necessary, supplementing local philanthropic endeavour by administrative measures or by financial assistance. Through the machinery of the early notification of births the Sanitary Authority will be in possession of valuable information for directing the activities of health visitors and if home visitation is undertaken by a voluntary agency the particulars of

notified births might be promptly communicated. In all cases the work should be carried on in close association with that of the Sanitary Authority, and any insanitary conditions and infectious disease discovered by the health visitors should be at once reported to the Sanitary Officers.

APPOINTMENT OF COMMITTEES.

It will be observed that power is given by Section 2 of the Notification of Births (Extension) Act, 1915, for the formation by the Local Authority of a Committee, or Committees, which shall include women, to deal with the arrangements for attending to the health of expectant mothers and nursing mothers, and children under five years of age. The Board would suggest that in constituting such a Committee it would be desirable to include representatives of philanthropic associations and of other bodies and persons interested in Motherhood and Child Welfare work, provided that there should be a majority of direct representatives of the Council upon any such Committee.

CO-ORDINATION OF ARRANGEMENTS.

In making their arrangements the Sanitary Authority should have due regard to co-ordination with the midwifery attendance organised by Boards of Guardians under the Medical Charities Act, as well as with similar services undertaken by local Maternity Hospitals or other such establishments. For example, expectant mothers should be encouraged and assisted in availing themselves of existing facilities for qualified attendance at the time of confinement; again, it appears to the Board that drugs and similar requisites might be obtained, in suitable cases, through attendance of the patients at the Medical Charities Dispensary. It would be of advantage that the districts assigned to health visitors should, as far as possible, coincide with the boundaries of Dispensary relief districts. The Boards of Guardians might also be approached with a view to co-operation in the discharge of the obligations cast upon them by the Children Act, 1908.

It is not expected that all local authorities will be able at once to initiate complete schemes, but it is important that any partial arrangements that may be made shall be such as can ultimately form part of a more extended organisation.

VOLUNTARY AGENCIES.

In cases where the Sanitary Authority are not disposed to take action or to cover the whole ground, the Board will be prepared to deal with applications for a Grant from Voluntary Agencies, but the Board trust that Sanitary Authorities will show sufficient interest in this important matter to render such cases of rare occurrence, and that they will endeavour to take advantage of the Government Grant which is now proposed for such schemes as are con-

ducted on the lines laid down in the Board's regulations. Claims for participation in the grant should be furnished to the Local Government Board as soon as possible after the 31st December, 1916, and not later than the 1st February, 1917.

A summary of points to be considered in framing a scheme for Maternity and Child Welfare is appended for the Council's guidance.

I am, Sir,

Your obedient Servant,

A. R. BARLAS,

Secretary.

To

The Town Clerk of each County Borough.
The Clerk of each Urban District Council.

SUMMARY OF POINTS FOR CONSIDERATION.

The following points may be dealt with by Sanitary Authorities when compiling a scheme, but only such items as come within the Regulations will rank for recoupment from the Government Grant :—

1. *Ante-Natal.*
   - (*a*) Home Visiting of expectant mothers.
   - (*b*) Clinics for expectant mothers.
   - (*c*) Arrangements for confinement of expectant mothers, including Hospital accommodation, and preparation of clothing for infants and mothers.

2. *Natal.*
   - (*a*) Arrangements for skilled attendance at confinement.
   - (*b*) Special arrangements in difficult cases and for women in their first confinement.

3. *Post Natal.*
   - (*a*) Treatment in Hospital of complicated cases.
   - (*b*) Provision of systematic treatment for infants and advice for mothers at Centres.
   - (*c*) Provision of Health Visitors to advise mothers in their own homes.
   - (*d*) Provision of skilled advice by Midwives or Nurses for mothers in cases requiring it at home.
   - (*e*) The establishment of Nurseries, Creches, Clinics and Baby Clubs, and provision of skilled advice at these places, and the teaching of mothers.

4. *General.*

(*a*) General teaching for the older girls at the primary schools, especially in large centres of population, of Hygiene, care of health and preparation of food.

(*b*) Special teaching, after the school age, of women, in domestic hygiene, management of the household on hygienic lines, food values and food economy with special reference to the care of the health of mothers and children.

(*c*) Special instruction at the Lying-in Hospitals or elsewhere of Nurses and Health Visitors in the care of mothers and infants.

(*d*) The whole scheme may be best undertaken by the Sanitary Authority, who can arrange with various Societies and other bodies, including Hospitals, to undertake certain portions of the work. The Sanitary Authority should make themselves responsible for the good working of the scheme as a whole, as a portion of the Public Health administration of their District.

The Sanitary Authority will receive no recoupment in respect of the cost of providing dinners for necessitous expectant mothers, and milk for infants.

Recoupment of portion of the following expenses may be claimed by the Sanitary Authority from the Local Government Board :—

(1) The salaries of such Doctors, Nurses, and other Officers.

(2) Such rent and other expenses of Maternity Centres, Day Nurseries and Office accommodation,

(3) The cost of such medical and midwifery services, including drugs and other requisites, for necessitous women not otherwise provided for at the time of confinement,

as may be sanctioned by the Local Government Board.

REGULATIONS UNDER WHICH GRANTS WILL BE PAID BY THE LOCAL GOVERNMENT BOARD DURING THE YEAR ENDING 31ST MARCH, 1917.

1. The Local Government Board for Ireland will pay grants during the financial year ending 31st March, 1917, in aid of approved schemes for Maternity and Child Welfare in Urban Districts, and Boroughs, including the following services :—

(1) Such expenses as the Local Government Board may approve for administering a scheme of visiting expectant mothers, mothers after childbirth, and infants and young children,

(2) The provision of a midwife or doctor for the aid, in their confinement, of necessitous women not being entitled to benefit under the National Insurance Acts or in receipt of assistance from the Poor Law Authority, and of such drugs and other requisites as may be approved for the use of such women and their infants.

(3) The expenses (excluding the cost of milk, prepared or modified milk, and other foods or patent foods) of a Maternity Centre, *i.e.*, an institution providing any or all of the following activities, viz., medical supervision and advice for expectant and nursing mothers and in respect of infants and young children, and medical treatment for cases needing it, provided always that the Grant under this heading will not be applicable to any Hospital, save as far as special new facilities are provided thereat for carrying on infant and maternity consultations (which have not hitherto formed part of the normal work of such Hospital) apart from the treatment of sick persons ordinarily afforded in the Out-patients' Department, and that in such cases the Grant will be confined to the new consultation facilities, including simple treatment, and will not extend to any special payments for operations, &c.

(4) The expenses (excluding the cost of food) of a Day Nursery for the care of the young children of working women necessarily absent at work, provided that fees are charged to the mothers sufficient at least to cover the cost of all food supplied.

2. The grant will be assessed on the basis of the expenditure incurred on the foregoing services in the year ending 31st December, 1916, and will extend to not more than one-half of approved net expenditure, provided that the Board may exclude any items of expenditure which in their opinion should be deducted for the purpose of assessing the grant, or they may at their discretion reduce or withhold the grant, and if any question arises as to the interpretation of these regulations, the decision of the Board shall be final.

3. The appointment, qualification, and salary of all officers, nurses, and health visitors will be subject to the approval of the Board.

4. Applications will be receivable :—

(*a*) primarily from the local authority of the Urban District or Borough who will transmit the claims of all Voluntary Agencies associated with their scheme for Maternity and Child Welfare work as defined in Article 1 within their District.

(*b*) secondarily in default of action by the Local Authority, or where that Authority do not cover the whole ground, from any Voluntary Agency engaged in such work in an Urban District or Borough.

5. Grants paid to voluntary agencies will be subject to the following conditions :—

(1) That the work of the agency is co-ordinated as far as practicable with the public health administration of the Local Authority.

(2) That the accounts will be kept in such form and audited in such manner as the Board may direct.

6. The premises and work of the Local Authority or Voluntary Agency shall be open to inspection by any of the Board's Officers or Inspectors.

7. Records of the work done shall be kept to the satisfaction of the Board.

8. An application for a grant must be made on a form supplied by the Board.

TABLE I.

INFANT MORTALITY IN IRELAND.

DEATH-RATES OF INFANTS UNDER ONE YEAR PER 1,000 BIRTHS FOR TWENTY-FIVE YEARS, 1891–1915.

(*Extracted from the Annual Reports of the Registrar-General for Ireland.*)

Year	Death-rate per 1,000 Births	Year	Death-rate per 1,000 Births
1891	95	1904	100
1892	105	1905	95
1893	102	1906	93
1894	102	1907	92
1895	104	1908	97
1896	95	1909	92
1897	109	1910	95
1898	110	1911	94
1899	108	1912	86
1900	109	1913	97
1901	101	1914	87
1902	100	1915	92
1903	96		

TABLE II.

DEATH-RATES OF INFANTS UNDER ONE YEAR IN COUNTIES AND COUNTY BOROUGHS IN IRELAND PER 1,000 BIRTHS FOR THE DECADE 1901–1910 AND THE AVERAGE OF THE INFANT DEATH-RATES FOR THE FIVE YEARS, 1911–15.

(*Compiled from figures extracted from the Annual Reports of the Registrar-General for Ireland.*)

Counties	Infant Death-rates 1901–1910	Average of Infant Death-rates 1911–1915	Counties	Infant Death-rates 1901–1910	Average of Infant Death-rates 1911–1915
Antrim .	83.8	85.4	Meath .	75.2	74.1
Armagh .	91.7	88.3	Monaghan .	67.9	67.9
Carlow .	82.0	72.0	Queen's Co. .	77.1	71.0
Cavan .	57.9	55.0	Roscommon .	55.7	42.2
Clare .	73.7	69.9	Sligo .	64.7	63.3
Cork .	81.0	73.1	Tipperary, N.R. .	79.3	67.4
Donegal .	68.9	61.6			
Down .	87.1	84.2	Tipperary, S.R. .	96.3	89.9
Dublin .	126.4	120.1	Tyrone .	78.8	76.8
Fermanagh .	67.8	66.4	Waterford .	88.5	84.2
Galway .	63.3	57.9	Westmeath .	87.1	76.4
Kerry .	71.6	65.3	Wexford .	97.3	86.6
Kildare .	85.8	91.4	Wicklow .	77.7	71.8
Kilkenny .	98.5	89.4			
King's .	73.5	68.8	*Co. Boroughs.*		
Leitrim .	51.9	47.2	Belfast .	143.6	135.2
Limerick .	102.7	91.7	Cork .	125.1	124.2
Londonderry	82.7	73.2	Dublin .	156.7	157.5
Longford .	78.2	67.6	Limerick .	119.7	113.6
Louth .	84.2	81.7	Londonderry	114.9	109.9
Mayo .	65.3	57.9	Waterford .	118.5	139.7

TABLE III.

RELATIVE FIGURES OF INFANT MORTALITY, GENERAL MORTALITY, AND BIRTH-RATE FOR EACH COUNTY AND COUNTY BOROUGH IN IRELAND (IRELAND = 100) FOR AVERAGE OF FIVE YEARS, 1911–1915.

(*Compiled from the Annual Reports of the Registrar-General for Ireland.*)

Counties and County Boroughs	Infant Mortality	Death-rate. All Causes	Birth-rate
Ireland	100.0	100.0	100.0
Roscommon	46.3	83.3	85.9
Leitrim	51.8	79.2	87.2
Cavan	60.3	88.7	89.0
Galway	63.5	84.5	96.9
Mayo	63.5	81.0	103.5
Donegal	67.5	92.9	96.5
Sligo	69.4	91.7	91.2
Kerry	71.6	76.8	102.2
Fermanagh	72.8	96.4	90.7
Tipperary (North Riding)	73.9	89.3	89.4
Longford	74.1	97.0	90.3
Monaghan	74.5	107.1	87.7
King's	75.4	95.2	90.3
Clare	76.6	83.9	86.3
Queen's	77.9	95.8	90.7
Wicklow	78.7	90.5	86.3
Carlow	78.9	97.6	89.4

TABLE III.—*continued.*

Counties and County Boroughs	Infant Mortality	Death-rate. All Causes	Birth-rate
Cork	80.2	89.9	92.1
Londonderry	80.3	101.2	92.1
Meath	81.2	95.8	90.0
Westmeath	83.8	97.0	88.5
Tyrone	84.2	106.0	93.4
Louth	89.6	96.4	97.8
Down	92.3	100.6	95.2
Waterford	92.3	98.2	87.2
Antrim	93.6	100.0	98.2
Wexford	95.0	106.0	93.8
Armagh	96.8	108.3	94.7
Kilkenny	98.0	103.0	94.7
Tipperary (South Riding) .	98.6	98.8	96.9
Kildare	100.2	91.1	94.7
Limerick	100.5	100.0	103.5
Londonderry County Borough .	120.5	98.2	115.0
Limerick County Borough .	124.6	107.7	114.1
Dublin	131.7	95.8	77.1
Cork County Borough . .	136.2	122.0	107.9
Belfast County Borough . .	148.2	106.5	122.5
Waterford County Borough .	153.2	113.1	106.6
Dublin County Borough . .	172.7	142.3	135.2

TABLE IV.

PROPORTION OF THE POPULATION OF EACH COUNTY (INCLUSIVE OF COUNTY BOROUGHS) IN IRELAND NON-RESIDENT ON AGRICULTURAL HOLDINGS AND THE AVERAGE DEATH-RATES OF INFANTS UNDER ONE YEAR PER 1,000 BIRTHS FOR THE FIVE YEARS, 1911–1915.

(*Prepared from the Census Returns*, 1911, *and the Annual Reports of the Registrar-General for Ireland.*)

County	Proportion of Population Non-Resident on Agricultural Holdings	Average Infant Death Rates, 1911–15	County	Proportion of Population Non-Resident on Agricultural Holdings	Average Infant Death Rates, 1911–15
Leitrim .	9.2	47.2	Wexford .	31.7	86.6
Roscommon	9.7	42.2	King's .	31.9	68.8
Mayo .	13.6	57.9	Westmeath	32.3	76.4
Donegal .	14.0	61.6	Carlow .	37.0	72.0
Cavan .	14.2	55.0	Tipperary, (S.R.)	38.5	89.9
Fermanagh	16.9	66.4	Armagh .	39.1	88.3
Longford .	18.0	67.6	Limerick .	41.5	98.0
Sligo .	18.6	63.3	Kildare .	41.6	91.4
Galway .	18.8	57.9	Londonderry	43.5	85.8
Monaghan	19.1	67.9	Cork .	46.2	84.5
Meath .	20.6	74.1	Wicklow .	46.5	71.8
Clare .	22.7	69.9	Waterford .	50.2	104.8
Kerry .	23.2	65.3	Louth .	50.4	81.7
Tyrone .	23.5	76.8	Down .	61.3	96.3
Queen's Co.	27.3	71.0	Antrim .	75.7	123.3
Tipperary . (N.R.)	28.0	67.4	Dublin .	90.4	148.5
Kilkenny .	30.2	89.4			

TABLE V.

STATEMENT SHOWING THE DIFFERENT CAUSES OF DEATH OF INFANTS UNDER ONE YEAR OF AGE IN EACH COUNTY AND COUNTY BOROUGH AND THE DEATH-RATE PER 1,000 BIRTHS FROM EACH CAUSE. 1915.

(Prepared from figures furnished by the Registrar-General for Ireland.)

1915 Infant Mortality	Dublin County Borough		Belfast County Borough		Cork County Borough	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	1,497	160.30	1,403	136.73	222	118.84
Small-pox	—	—	—	—	—	—
Measles	15	1.60	33	3.22	4	2.14
Scarlet-fever	—	—	5	0.49	1	0.54
Whooping-cough	60	6.42	64	6.23	6	3.22
Diphtheria, croup	7	0.75	1	0.10	—	—
Influenza	5	0.54	2	0.20	—	—
Chicken-pox	1	0.11	—	—	—	—
Diarrhœal diseases	319	34.16	181	17.64	34	18.19
Gastritis	32	3.42	20	1.95	5	2.68
Tuberculous meningitis	23	2.46	17	1.66	4	2.14
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	9	0.97	7	0.69	3	1.61
Other tuberculous diseases	17	1.82	12	1.18	3	1.61
Premature birth	180	19.18	156	15.20	18	9.63
Congenital malformations	34	3.64	43	4.19	4	2.14
Want of Breast Milk	7	0.75	—	—	—	—
Atrophy, debility, marasmus	228	24.41	278	27.09	43	23.01
Syphilis	22	2.35	19	1.85	—	—
Pneumonia	146	15.63	207	20.16	15	8.03
Erysipelas	—	—	—	—	—	—
Rickets	2	0.22	1	0.10	—	—
Injury at birth	5	0.53	3	0.29	—	—
Meningitis (not tuberculous) and encephalitis	18	1.93	29	2.83	14	7.49
Convulsions	172	18.42	79	7.69	42	22.47
Laryngitis	—	—	10	0.98	—	—
Bronchitis	112	12.00	127	12.37	16	8.56
Absorption of deleterious gases	6	0.64	15	1.46	4	2.15
Other causes.	77	8.35	94	9.16	6	3.22
Total Births	9,339	—	10,261	—	1,868	—

TABLE V.—*continued.*

1915 Infant Mortality	Londonderry County Borough		Limerick County Borough		Waterford County Borough	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	150	142.45	102	108.16	74	110.28
Small-pox	—	—	—	—	—	—
Measles	1	0.95	—	—	—	—
Scarlet-fever	—	—	1	1.06	—	—
Whooping-cough	34	32.29	2	2.12	—	—
Diphtheria, croup	—	—	—	—	—	—
Influenza	3	2.85	1	1.06	—	—
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	31	29.44	—	—	16	23.84
Gastritis	—	—	13	13.79	1	1.49
Tuberculous meningitis	2	1.90	—	—	1	1.49
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	—	—	1	1.49
Other tuberculous diseases	2	1.90	1	1.06	—	—
Premature birth	3	2.85	14	14.85	11	16.39
Congenital malformations	2	1.90	2	2.12	3	4.47
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	35	33.24	9	9.54	13	19.37
Syphilis	—	—	—	—	—	—
Pneumonia	9	8.55	1	1.06	5	7.45
Erysipelas	—	—	—	—	1	1.49
Rickets	—	—	—	—	—	—
Injury at birth	—	—	—	—	1	1.49
Meningitis (not tuberculous) and encephalitis	3	2.85	1	1.06	1	1.49
Convulsions	2	1.90	36	38.18	2	2.98
Laryngitis	—	—	1	1.06	—	—
Bronchitis	18	17.10	17	18.02	10	14.90
Absorption of deleterious gases	—	—	—	—	—	—
Other causes	5	4.73	3	3.18	8	11.94
Total Births	1,053	—	943	—	671	—

TABLE V.—*continued.*

1915 Infant Mortality	Antrim		Armagh		Cavan	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	379	92.71	209	86.47	102	55.71
Small-pox	—	—	—	—	—	—
Measles	7	1.71	6	2.48	2	1.09
Scarlet-fever	1	.24	—	—	—	—
Whooping-cough	26	6.36	1	.41	4	2.18
Diphtheria, croup	1	.24	—	—	2	1.09
Influenza	3	.73	1	.41	3	1.64
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	46	11.25	8	3.31	4	2.18
Gastritis	4	.98	4	1.66	1	.55
Tuberculous meningitis	6	1.47	2	.83	—	—
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	3	.73	2	.83	—	—
Other tuberculous diseases	2	.49	1	.41	1	.55
Premature birth	51	12.48	25	10.34	8	4.37
Congenital malformations	12	2.94	9	3.72	1	.55
Want of Breast Milk	—	—	1	.41	—	—
Atrophy, debility, marasmus	93	22.75	71	29.38	33	18.02
Syphilis	3	.73	3	1.24	—	—
Pneumonia	25	6.12	15	6.21	5	2.73
Erysipelas	—	—	3	1.24	—	—
Rickets	1	.24	—	—	—	—
Injury at birth	—	—	—	—	3	1.64
Meningitis (not tuberculous) and encephalitis	6	1.47	2	.83	—	—
Convulsions	23	5.63	10	4.14	14	7.65
Laryngitis	2	.49	1	.41	—	—
Bronchitis	35	8.56	28	11.58	11	6.01
Absorption of deleterious gases	4	.98	2	.83	—	—
Other causes	25	6.12	14	5.79	10	5.46
Total Births	4,088	—	2,417	—	1,831	—

TABLE V.—*continued.*

1915 Infant Mortality	Donegal		Down		Fermanagh	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	244	66.63	352	85.89	102	83.40
Small-pox	—	—	—	—	—	—
Measles	4	1.09	9	2.20	—	—
Scarlet-fever	—	—	2	.49	—	—
Whooping-cough	7	1.91	9	2.20	—	—
Diphtheria, croup	6	1.64	6	1.46	1	.82
Influenza	8	2.18	5	1.22	1	.82
Chicken-pox	—	—	1	.24	—	—
Diarrhœal diseases	15	4.10	20	4.88	4	3.27
Gastritis	5	1.37	5	1.22	2	1.64
Tuberculous meningitis	—	—	7	1.71	—	—
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	1	.27	2	.49	—	—
Other tuberculous diseases	3	.82	6	1.46	—	—
Premature birth	20	5.46	49	11.96	2	1.64
Congenital malformations	5	1.37	13	3.17	—	—
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	89	24.30	103	25.13	43	35.16
Syphilis	—	—	1	.24	—	—
Pneumonia	30	8.19	35	8.54	6	4.90
Erysipelas	1	.27	—	—	—	—
Rickets	—	—	—	—	—	—
Injury at birth	2	.55	2	.49	1	.82
Meningitis (not tuberculous) and encephalitis	1	.27	1	.24	1	.82
Convulsions	10	2.73	31	7.56	15	12.27
Laryngitis	1	.27	1	.24	—	—
Bronchitis	25	6.83	30	7.32	20	16.35
Absorption of deleterious gases	—	—	—	—	—	—
Other causes	11	3.00	14	3.42	6	4.91
Total Births	3,662	—	4,098	—	1,223	—

TABLE V.—*continued.*

1915 Infant Mortality	Londonderry		Monaghan		Tyrone	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	161	81.97	86	63.70	241	80.93
Small-pox	—	—	—	—	—	—
Measles	5	2.55	—	—	2	.67
Scarlet-fever	1	.51	1	.74	—	—
Whooping-cough	20	10.18	—	—	3	1.01
Diphtheria, croup	1	.51	—	—	—	—
Influenza	4	2.04	5	3.70	2	.67
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	6	3.06	3	2.22	17	5.71
Gastritis	4	2.04	—	—	8	2.69
Tuberculous meningitis	2	1.02	1	.74	4	1.34
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	—	—	1	.34
Other tuberculous diseases	3	1.53	2	1.48	4	1.34
Premature birth	18	9.16	6	4.44	27	9.07
Congenital malformations	6	3.05	3	2.22	4	1.34
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	42	21.38	31	22.96	77	25.85
Syphilis	1	.51	—	—	1	.34
Pneumonia	6	3.05	7	5.18	10	3.36
Erysipelas	—	—	—	—	—	—
Rickets	—	—	—	—	1	.34
Injury at birth	—	—	—	—	—	—
Meningitis (not tuberculous) and encephalitis	1	.51	—	—	2	.67
Convulsions	12	6.11	9	6.67	19	6.38
Laryngitis	—	—	—	—	—	—
Bronchitis	17	8.66	12	8.89	38	12.76
Absorption of deleterious gases	2	1.02	—	—	1	.34
Other causes	10	5.09	6	4.44	20	6.72
Total Births	1,964	—	1,350	—	2,978	—

TABLE V.—*continued.*

1915 Infant Mortality	Clare		Cork		Kerry	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	132	67.93	487	77.63	223	61.10
Small-pox	—	—	—	—	—	—
Measles	—	—	6	.96	1	.27
Scarlet-fever	1	.51	—	—	1	.27
Whooping-cough	1	.51	26	4.14	11	3.01
Diphtheria, croup	1	.51	7	1.12	1	.27
Influenza	1	.51	4	.64	2	.55
Chicken-pox	—	—	1	.16	—	—
Diarrhœal diseases	8	4.12	40	6.38	40	10.96
Gastritis	3	1.54	17	2.71	13	3.56
Tuberculous meningitis	2	1.03	7	1.12	3	.82
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	7	1.12	2	.55
Other tuberculous diseases	—	—	2	.32	2	.55
Premature birth	6	3.09	37	5.90	3	.82
Congenital malformations	2	1.03	10	1.59	7	1.92
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	53	27.28	113	18.01	76	20.82
Syphilis	—	—	1	.16	—	—
Pneumonia	7	3.60	45	7.17	7	1.92
Erysipelas	—	—	1	.16	—	—
Rickets	—	—	3	.48	—	—
Injury at birth	—	—	3	.48	3	.82
Meningitis (not tuberculous) and encephalitis	—	—	12	1.91	1	.27
Convulsions	31	15.95	62	9.88	11	3.01
Laryngitis	1	.51	2	.32	—	—
Bronchitis	12	6.18	49	7.81	26	7.12
Absorption of deleterious gases	—	—	—	—	—	—
Other causes	3	1.54	32	5.10	13	3.56
Total Births	1,943	—	6,273	—	3,650	—

TABLE V.—*continued.*

1915 Infant Mortality	Limerick		Tipperary (North Riding)		Tipperary (South Riding)	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	211	87.48	72	55.34	147	78.03
Small-pox	—	—	—	—	—	—
Measles	2	.83	—	—	—	—
Scarlet-fever	1	.42	—	—	—	—
Whooping-cough	3	1.24	—	—	2	1.06
Diphtheria, croup	—	—	—	—	—	—
Influenza	1	.42	—	—	—	—
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	20	8.29	11	8.45	22	11.68
Gastritis	12	4.97	—	—	11	5.84
Tuberculous meningitis	3	1.24	1	.77	—	—
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	1	.42	1	.77	2	1.06
Other tuberculous diseases	1	.42	—	—	—	—
Premature birth	11	4.56	1	.77	9	4.78
Congenital malformations	2	.83	2	1.54	3	1.59
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	85	35.24	27	20.75	49	26.01
Syphilis	—	—	—	—	—	—
Pneumonia	7	2.90	5	3.84	5	2.65
Erysipelas	—	—	—	—	—	—
Rickets	3	1.24	—	—	—	—
Injury at birth	1	.42	—	—	—	—
Meningitis (not tuberculous) and encephalitis	3	1.24	1	.77	1	.53
Convulsions	16	6.63	17	13.07	23	12.21
Laryngitis	—	—	—	—	1	.53
Bronchitis	30	12.44	3	2.31	18	9.55
Absorption of deleterious gases	—	—	—	—	—	—
Other causes	9	3.73	3	2.31	1	.53
Total Births	2,412	—	1,301	—	1,884	—

TABLE V.—*continued.*

1915 Infant Mortality	Waterford		Carlow		Dublin	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	79	77.00	56	81.16	354	121.69
Small-pox	—	—	—	—	—	—
Measles	2	1.95	—	—	5	1.72
Scarlet-fever	—	—	—	—	—	—
Whooping-cough	1	.97	1	1.45	19	6.53
Diphtheria, croup	1	.97	—	—	1	.34
Influenza	1	.97	—	—	3	1.03
Chicken-pox	1	.97	—	—	2	.68
Diarrhœal diseases	2	1.95	3	4.35	56	19.25
Gastritis	1	.97	1	1.45	2	.69
Tuberculous meningitis	—	—	—	—	1	.34
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	1	1.45	—	—
Other tuberculous diseases	—	—	1	1.45	2	.69
Premature birth	7	6.82	1	1.45	47	16.16
Congenital malformations	1	.97	5	7.25	7	2.41
Want of Breast Milk	—	—	—	—	5	1.72
Atrophy, debility, marasmus	38	37.04	20	28.98	62	21.31
Syphilis	—	—	—	—	6	2.06
Pneumonia	3	2.92	3	4.35	25	8.59
Erysipelas	—	—	—	—	—	—
Rickets	1	.97	—	—	1	.34
Injury at birth	—	—	—	—	2	.69
Meningitis (not tuberculous) and encephalitis	1	.97	—	—	3	1.03
Convulsions	10	9.75	6	8.69	52	17.87
Laryngitis	—	—	2	2.90	—	—
Bronchitis	4	3.90	8	11.59	30	10.31
Absorption of deleterious gases	—	—	—	—	1	.34
Other causes	5	4.87	4	5.80	22	7.56
Total Births	1,026	—	690	—	2,909	—

TABLE V.—*continued.*

1915 Infant Mortality	Kildare		Kilkenny		King's County	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	119	95.66	125	80.23	70	62.17
Small-pox	—	—	—	—	—	—
Measles	1	.80	—	—	4	3.55
Scarlet-fever	—	—	—	—	—	—
Whooping-cough	9	7.23	4	2.57	—	—
Diphtheria, croup	—	—	—	—	—	—
Influenza	1	.80	4	2.57	—	—
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	4	3.22	5	3.21	3	2.66
Gastritis	—	—	—	—	3	2.66
Tuberculous meningitis	1	.80	—	—	1	.89
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	1	.80	2	1.28	1	.89
Other tuberculous diseases	3	2.41	—	—	6	5.33
Premature birth	12	9.65	9	5.78	4	3.55
Congenital malformations	2	1.61	1	.64	3	2.66
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	34	27.33	49	31.45	16	14.21
Syphilis	2	1.61	—	—	1	.89
Pneumonia	4	3.22	2	1.28	2	1.78
Erysipelas	—	—	—	—	1	.89
Rickets	—	—	—	—	—	—
Injury at birth	—	—	—	—	—	—
Meningitis (not tuberculous) and encephalitis	4	3.22	2	1.28	1	.89
Convulsions	20	16.08	15	9.63	16	14.21
Laryngitis	—	—	—	—	—	—
Bronchitis	7	5.63	16	10.27	6	5.33
Absorption of deleterious gases	2	1.61	1	.64	—	—
Other causes	12	9.65	15	9.63	2	1.78
Total Births	1,244	—	1,558	—	1,126	—

TABLE V.—*continued.*

1915 Infant Mortality	Longford		Louth		Meath	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	55	58.82	120	87.53	97	71.59
Small-pox	—	—	—	—	—	—
Measles	1	1.07	—	—	1	.74
Scarlet-fever	—	—	—	—	—	—
Whooping-cough	—	—	6	4.38	3	2.21
Diphtheria, croup	1	1.07	—	—	—	—
Influenza	—	—	—	—	2	1.48
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	1	1.07	9	6.57	2	1.48
Gastritis	1	1.07	3	2.19	1	.74
Tuberculous meningitis	—	—	—	—	2	1.48
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	—	—	—	—
Other tuberculous diseases	—	—	—	—	3	2.21
Premature birth	2	2.14	7	5.11	3	2.21
Congenital malformations	—	—	4	2.92	2	1.48
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	26	27.81	33	24.07	29	21.40
Syphilis	—	—	1	.73	—	—
Pneumonia	3	3.21	7	5.11	7	5.17
Erysipelas	—	—	—	—	—	—
Rickets	—	—	—	—	1	.74
Injury at birth	1	1.07	—	—	1	.74
Meningitis (not tuberculous) and encephalitis	—	—	3	2.19	1	.74
Convulsions	10	10.69	29	21.15	24	17.71
Laryngitis	—	—	—	—	—	
Bronchitis	7	7.49	12	8.76	5	3.69
Absorption of deleterious gases	1	1.07	—	—	—	—
Other causes	1	1.07	6	4.38	10	7.38
Total Births	935	—	1,371	—	1,355	—

TABLE V.—*continued.*

1915 Infant Mortality	Queen's County		Westmeath		Wexford	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	80	76.04	96	84.58	152	73.54
Small-pox	—	—	—	—	—	—
Measles	—	—	—	—	—	—
Scarlet-fever	—	—	—	—	—	—
Whooping-cough	—	—	1	.88	—	—
Diphtheria, croup	—	—	2	1.76	—	—
Influenza	—	—	4	3.52	—	—
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	4	3.80	4	3.52	10	4.84
Gastritis	1	.95	1	.88	6	2.90
Tuberculous meningitis	—	—	—	—	1	.48
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	—	—	2	.97
Other tuberculous diseases	—	—	—	—	3	1.45
Premature birth	2	1.90	5	4.41	11	5.32
Congenital malformations	1	.95	2	1.76	5	2.42
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	36	34.22	38	33.48	57	27.58
Syphilis	—	—	—	—	—	—
Pneumonia	5	4.75	5	4.41	7	3.39
Erysipelas	—	—	—	—	—	—
Rickets	—	—	—	—	—	—
Injury at birth	1	.95	1	.88	—	—
Meningitis (not tuberculous) and encephalitis	3	2.85	—	—	1	.48
Convulsions	13	12.36	19	16.74	20	9.68
Laryngitis	—	—	—	—	1	.48
Bronchitis	9	8.56	10	8.81	20	9.68
Absorption of deleterious gases	2	1.90	—	—	—	—
Other causes	3	2.85	4	3.52	8	3 87
Total Births	1,052	—	1,135	—	2,067	—

TABLE V.—*continued.*

1915 Infant Mortality	Wicklow		Galway		Leitrim	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	60	50.98	220	57.11	56	46.39
Small-pox	—	—	—	—	—	—
Measles	—	—	—	—	—	—
Scarlet-fever	—	—	—	—	—	—
Whooping-cough	—	—	11	2.86	7	5.80
Diphtheria, croup	—	—	6	1.56	—	—
Influenza	2	1.70	2	.52	—	—
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	4	3.40	19	4.93	2	1.66
Gastritis	4	3.40	5	1.30	—	—
Tuberculous meningitis	2	1.70	1	.26	—	—
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	4	3.40	1	.26	—	—
Other tuberculous diseases	—	—	—	—	—	—
Premature birth	2	1.70	9	2.34	2	1.66
Congenital malformations	—	—	5	1.30	1	.83
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	22	18.69	53	13.76	19	15.74
Syphilis	—	—	—	—	—	—
Pneumonia	4	3.40	9	2.34	1	.83
Erysipelas	—	—	—	—	—	—
Rickets	—	—	—	—	—	—
Injury at birth	—	—	—	—	—	—
Meningitis (not tuberculous) and encephalitis	—	—	4	1.04	—	—
Convulsions	6	5.10	64	16.61	4	3.31
Laryngitis	—	—	—	—	—	—
Bronchitis	6	5.10	18	4.67	17	14.08
Absorption of deleterious gases	—	—	—	—	1	.83
Other causes	4	3.40	13	3.36	2	1.66
Total Births	1,177	—	3,852	—	1,207	—

TABLE V.—*continued.*

1915 Infant Mortality	Mayo		Roscommon		Sligo	
	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births	Total Deaths	Death-rate per 1,000 Births
All causes	234	53.99	80	45.20	104	66.41
Small-pox	—	—	—	—	—	—
Measles	5	1.15	1	.56	1	.64
Scarlet-fever	—	—	—	—	—	—
Whooping-cough	8	1.85	3	1.69	5	3.19
Diphtheria, croup	4	.92	—	—	3	1.92
Influenza	3	.69	2	1.13	1	.64
Chicken-pox	—	—	—	—	—	—
Diarrhœal diseases	8	1.85	3	1.69	5	3.19
Gastritis	1	.23	1	.56	3	1.92
Tuberculous meningitis	1	.23	—	—	1	.64
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	1	.56	—	—
Other tuberculous diseases	2	.46	1	.56	1	.64
Premature birth	6	1.38	5	2.82	3	1.92
Congenital malformations	3	.69	—	—	1	.64
Want of Breast Milk	—	—	—	—	—	—
Atrophy, debility, marasmus	79	18.23	43	24.29	32	20.43
Syphilis	—	—	—	—	—	—
Pneumonia	21	4.85	2	1.13	5	3.19
Erysipelas	—	—	—	—	—	—
Rickets	—	—	—	—	—	—
Injury at birth	—	—	—	—	—	—
Meningitis (not tuberculous) and encephalitis	4	.92	—	—	—	—
Convulsions	39	9.00	6	3.39	25	15.96
Laryngitis	3	.69	—	—	1	.64
Bronchitis	28	6.46	8	4.52	12	7.66
Absorption of deleterious gases	—	—	—	—	—	—
Other causes	19	4.38	4	2.26	5	3.19
Total Births	4,334	—	1,770	—	1,566	—

TABLE VI.

CAUSES OF DEATHS OF INFANTS UNDER ONE YEAR IN IRELAND, SHOWING DEATH-RATE FROM EACH CAUSE PER 1,000 BIRTHS FOR THE FIVE YEARS, 1911–15.

(*Extracted from the Annual Reports of the Registrar-General for Ireland.*)

Causes of Death	1911	1912	1913	1914	1915
Measles	0.84	1.94	1.86	1.80	1.23
Whooping-cough	3.50	4.54	2.98	3.32	3.73
Diarrhœal diseases	20.02	8.95	18.21	14.23	12.39
Premature birth, Congenital defects, Want of breast milk, &c., Atrophy, marasmus, &c.	33.44	31.52	34.75	32.80	34.57
Tuberculous diseases	3.00	2.47	2.65	2.33	2.01
Convulsions	9.29	9.77	9.49	9.77	10.61
Bronchitis and Pneumonia	13.17	17.05	16.47	13.21	16.64
Other causes	10.63	10.14	10.71	9.80	10.39
All causes	93.89	86.38	97.12	87.26	91.57

TABLE VII.

STATEMENT SHOWING, BY SEXES, THE NUMBER OF DEATHS OF INFANTS UNDER ONE YEAR OLD PER 1,000 BIRTHS REGISTERED IN THE REGISTRARS' DISTRICTS CONTAINING THE TWENTY-SEVEN PRINCIPAL TOWNS OF IRELAND DURING THE THREE YEARS, 1913–15.

(*Furnished by the Registrar-General for Ireland.*)

Town Districts	Infant Mortality Rate, 1913–1915		Town Districts	Infant Mortality Rate, 1913–1915	
	Males	Females		Males	Females
Dublin Registration Area	165	142	Ballymena .	118	101
Belfast . . .	155	125	Sligo .	121	79
Cork . . .	125	105	Kilkenny .	76	77
Londonderry . .	137	93	Tralee .	109	92
Limerick . .	95	97	Clonmel .	111	75
Waterford . .	149	135	Newtownards	170	131
Galway . . .	142	126	Queenstown .	135	109
Dundalk . .	112	102	Larne .	114	88
Lurgan . . .	112	89	Coleraine .	102	67
Drogheda . .	84	59	Bangor .	83	69
Lisburn . . .	131	113	Bray .	56	83
Newry . . .	116	73	Athlone .	119	75
Portadown . .	120	83	Armagh .	84	113
Wexford . . .	115	96			

NOTE.—Some of the above Town Districts include a certain amount of rural area.

TABLE VIII.

SHOWING, BY CERTAIN AGE-PERIODS AND CAUSES OF DEATH, THE PROPORTION OF DEATHS OF INFANTS UNDER ONE YEAR OF AGE PER 1,000 BIRTHS REGISTERED DURING THE YEAR 1915, IN THE REGISTRARS' DISTRICTS CONTAINING THE 27 PRINCIPAL TOWN DISTRICTS OF IRELAND.

(*Extracted from the Annual Report of the Registrar-General for Ireland*, 1915.)

CAUSE OF DEATH	PROPORTION OF DEATHS TO 1,000 BIRTHS																	
	Days					Months												Under 1 Year.
	Under 1 day.	One and under 7 days.	7—	14—	21—	Under 1 month	1—	2—	3—	4—	5—	6—	7—	8—	9—	10—	11—	
I.—Com. Infective Diseases .	—	—	—	0.06	0.16	0.22	0.69	0.68	0.56	0.53	0.62	0.49	0.75	1.03	1.33	1.12	1.04	9.06
II.—Diarrhœal Diseases . .	—	0.19	0.59	0.50	0.66	1.94	3.33	3.59	2.99	2.06	2.09	1.81	1.56	1.34	1.12	1.62	0.66	24.11
III.—Wasting Diseases . .	10.07	8.88	4.66	3.28	2.74	29.63	5.61	2.52	2.06	0.91	0.71	0.83	0.31	0.16	0.19	0.31	0.13	43.37
IV.—Tuberculous Diseases . .	—	—	—	0.06	—	0.06	0.25	0.44	0.21	0.28	0.35	0.45	0.21	0.41	0.44	0.30	0.31	3.71
V.—Other Causes . . .	2.33	2.52	2.16	1.99	2.79	11.79	7.10	4.64	4.15	3.32	3.36	3.58	3.15	4.04	3.37	3.09	2.56	54.15
All Causes . . .	12.40	11.59	7.41	5.89	6.35	43.64	16.98	11.87	9.97	7.10	7.13	7.16	5.98	6.98	6.45	6.44	4.70	134.40

I.	Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Chicken-pox	—	—	—	—	0.03	0.03	—	0.03	—	—	—	—	—	—	0.06	—	0.03	0.15
	Measles	—	—	—	—	—	—	0.07	—	0.09	0.03	0.03	0.15	0.13	0.53	0.62	0.40	0.28	2.33
	Scarlet Fever	—	—	—	—	—	—	—	—	—	0.03	—	0.03	0.03	—	0.03	0.07	—	0.19
	Diphtheria, Croup	—	—	—	—	—	—	—	0.03	—	—	0.06	—	0.03	—	0.03	0.06	0.10	0.31
	Whooping-cough	—	—	—	0.06	0.13	0.19	0.62	0.62	0.47	0.47	0.53	0.31	0.56	0.50	0.59	0.59	0.63	6.08
II.	Diarrhœa and Enteritis	—	0.16	0.53	0.37	0.60	1.66	3.02	3.03	2.80	1.75	1.69	1.59	1.56	1.18	1.00	1.46	0.63	21.37
	Gastritis	—	0.03	0.06	0.13	0.06	0.28	0.31	0.56	0.19	0.31	0.40	0.22	—	0.16	0.12	0.16	0.03	2.74
III.	Premature Birth	6.68	4.20	1.64	0.90	0.56	13.98	0.69	0.13	0.13	—	—	—	0.03	—	—	0.03	—	14.99
	Congenital Defects	0.40	1.18	0.53	0.28	0.19	2.58	0.25	0.09	0.22	0.13	0.06	0.19	—	—	—	0.03	—	3.55
	Atrophy, Debility, Marasmus	2.99	3.50	2.49	2.10	1.99	13.07	4.67	2.30	1.71	0.78	0.65	0.64	0.28	0.16	0.19	0.25	0.13	24.83
IV.	Tuberculous Meningitis	—	—	—	0.06	—	0.06	0.09	0.16	0.03	0.12	0.16	0.19	0.12	0.19	0.22	0.12	0.22	1.68
	Abdominal Tuberculosis	—	—	—	—	—	—	0.10	0.03	0.09	—	0.16	0.13	0.03	0.09	0.06	0.09	—	0.78
	Other Tuberculous Diseases	—	—	—	—	—	—	0.06	0.25	0.09	0.16	0.03	0.13	0.06	0.13	0.16	0.09	0.09	1.25
V.	Erysipelas	—	—	—	—	—	—	0.03	—	—	—	—	—	—	—	0.03	—	—	0.06
	Syphilis	—	—	0.19	0.03	0.12	0.34	0.47	0.35	0.13	0.09	0.03	—	—	0.03	0.03	0.06	—	1.53
	Rickets	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Meningitis (not Tuberculous)	—	—	0.06	0.03	0.03	0.12	0.06	0.12	0.19	0.28	0.37	0.28	0.16	0.16	0.19	0.28	0.19	2.40
	Convulsions	0.65	1.28	1.03	0.81	1.18	4.95	2.15	1.53	1.06	0.93	0.65	0.69	0.51	0.71	0.44	0.37	0.31	14.30
	Bronchitis	—	0.06	0.16	0.50	0.59	1.31	1.59	1.37	1.53	0.87	0.65	0.90	0.93	0.90	1.00	0.75	0.69	12.49
	Laryngitis	—	—	0.06	—	0.03	0.09	—	—	0.03	—	—	0.03	0.03	0.06	0.03	0.07	—	0.34
	Pneumonia	—	0.22	0.31	0.22	0.34	1.09	1.37	0.78	0.75	0.81	1.12	1.21	1.12	1.84	1.40	1.31	1.12	13.92
	Injury at Birth	0.16	0.09	—	0.03	—	0.28	—	—	—	—	—	—	—	—	—	—	—	0.28
	Suffocation (Overlying)	0.03	0.09	0.10	—	0.09	0.31	0.28	0.12	0.12	0.03	—	—	0.03	—	—	—	—	0.89
	Other Causes	1.49	0.78	0.25	0.37	0.41	3.30	1.15	0.37	0.34	0.31	0.54	0.47	0.37	0.34	0.25	0.25	0.25	7.94

TABLE IX.

STATEMENT SHOWING, FOR THE SIX COUNTY BOROUGHS OF DUBLIN, BELFAST, CORK, LIMERICK, LONDONDERRY AND WATERFORD, THE PROPORTION OF DEATHS OF INFANTS FROM VARIOUS CAUSES AT THE UNDER-MENTIONED AGES PER 1,000 BIRTHS DURING THE YEARS 1914 AND 1915.

(Prepared from figures furnished by the Registrar-General for Ireland.)

Causes of Death	1914				1915			
	Under 3 Months	3 to 6 Months	6 to 12 Months	Total under 1 year	Under 3 Months	3 to 6 Months	6 to 12 Months	Total under 1 year
All causes	71.96	25.33	42.51	139.80	74.58	26.43	41.89	142.90
Common Infective Diseases :—								
Small-pox	—	—	—	—	—	—	—	—
Measles	0.08	0.20	3.97	4.25	0.04	0.17	1.99	2.20
Scarlet fever	—	—	0.16	0.16	—	0.08	0.21	0.29
Whooping-cough	1.03	0.92	3.77	5.72	1.49	1.49	3.89	6.87
Diphtheria, croup	—	—	0.44	0.44	0.04	0.04	0.25	0.33
Influenza	—	—	0.44	0.44	0.25	0.04	0.17	0.46
Chicken-pox	—	—	—	—	—	—	0.04	0.04
Diarrhœal diseases	10.56	8.81	10.56	29.93	8.54	7.21	8.33	24.08
Gastritis	1.39	0.79	0.87	3.05	1.33	0.92	0.70	2.95

Tuberculous Diseases :—								
Tuberculous meningitis	0.40	0.59	1.27	2.26	0.41	0.41	1.12	1.94
Tuberculous peritonitis, tabes mesenterica, and other abdominal tuberculosis	0.08	0.20	0.59	0.87	0.12	0.29	0.41	0.82
Other tuberculous diseases	0.32	0.75	0.95	2.02	0.33	0.25	0.87	1.45
Wasting Diseases :—								
Premature birth	15.28	0.24	0.04	15.56	15.58	0.17	0.09	15.84
Congenital malformations	2.50	0.20	0.12	2.82	3.03	0.41	0.21	3.65
Want of breast milk	0.24	—	—	0.24	0.17	0.12	—	0.29
Atrophy, debility, marasmus	17.85	3.23	1.23	22.31	20.06	3.15	1.91	25.12
Syphilis	1.95	0.75	0.32	3.02	1.24	0.33	0.12	1.69
Pneumonia	2.26	2.02	7.03	11.31	3.61	2.82	9.45	15.88
Erysipelas	0.04	—	—	0.04	0.04	—	—	0.04
Rickets	0.04	0.04	0.16	0.24	—	0.04	0.08	0.12
Injury at birth	0.32	—	—	0.32	0.37	—	—	0.37
Meningitis (not tuberculous) and encephalitis	0.40	0.56	1.07	2.03	0.37	0.95	1.41	2.73
Convulsions	7.82	2.14	1.99	11.95	7.75	2.78	3.27	13.80
Laryngitis	0.08	0.08	0.36	0.52	0.08	0.08	0.29	0.45
Bronchitis	3.53	2.50	5.31	11.34	3.89	3.31	5.22	12.42
Absorption of deleterious gases	1.03	0.48	—	1.51	0.79	0.21	0.04	1.04
Other causes	4.76	0.83	2.26	7.85	5.05	1.16	1.82	8.03

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TABLE X.

STATEMENT SHOWING FOR EACH OF THE COUNTY BOROUGHS OF DUBLIN, BELFAST, CORK, LONDONDERRY, LIMERICK, AND WATERFORD, THE DEATH-RATES OF INFANTS PER 1,000 BIRTHS FROM DIFFERENT CAUSES FOR VARIOUS AGE PERIODS UNDER ONE YEAR, FOR THE YEAR 1915.

(*Furnished by the Registrar-General for Ireland.*)

DUBLIN COUNTY BOROUGH.

Causes of Death	Under 3 Months	3–6 Months	6–12 Months	Total under 1 Year
All Causes	86.84	30.20	43.26	160.30
Common Infective Diseases :—				
Small-pox	—	—	—	—
Measles	—	0.11	1.49	1.60
Scarlet fever	—	—	—	—
Whooping-cough	1.28	1.39	3.75	6.42
Diphtheria, croup	0.11	0.11	0.53	0.75
Influenza	0.32	—	0.22	0.54
Chicken-pox	—	—	0.11	0.11
Diarrhœal diseases	13.71	8.99	11.46	34.16
Gastritis	1.39	1.28	0.75	3.42
Tuberculous Diseases :—				
Tuberculous meningitis	0.75	0.53	1.18	2.46
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	0.22	0.22	0.53	0.97
Other tuberculous diseases	0.53	0.43	0.86	1.82
Wasting Diseases :—				
Premature birth	18.74	0.22	0.22	19.18
Congenital malformations	3.10	0.32	0.22	3.64
Want of breast milk	0.43	0.32	—	0.75
Atrophy, debility, marasmus	17.77	4.82	1.82	24.41
Syphilis	1.50	0.53	0.32	2.35
Pneumonia	4.72	2.68	8.23	15.63
Erysipelas	—	—	—	—
Rickets	—	0.11	0.11	0.22
Injury at birth	0.53	—	—	0.53
Meningitis (not tuberculous) and encephalitis	0.11	0.96	0.86	1.93
Convulsions	11.68	3.00	3.74	18.42
Laryngitis	—	—	—	—
Bronchitis	3.31	3.11	5.58	12.00
Absorption of deleterious gases	0.53	0.11	—	0.64
Other causes	6.11	0.96	1.28	8.35

TABLE X.—*continued.*

BELFAST COUNTY BOROUGH.

Causes of Death	Under 3 Months	3–6 Months	6–12 Months	Total under 1 Year
All Causes	71.24	22.22	43.27	136.73
Common Infective Diseases :—				
Small-pox	—	—	—	—
Measles	0.10	0.29	2.83	3.22
Scarlet fever	—	0.10	0.39	0.49
Whooping-cough	1.36	1.17	3.70	6.23
Diphtheria, croup	—	—	0.10	0.10
Influenza	0.20	—	—	0.20
Chicken-pox	—	—	—	—
Diarrhœal diseases	5.56	6.14	5.94	17.64
Gastritis	1.17	0.39	0.39	1.95
Tuberculous Diseases :—				
Tuberculous meningitis	0.20	0.39	1.07	1.66
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	0.10	0.20	0.39	0.69
Other tuberculous diseases	0.20	0.10	0.88	1.18
Wasting Diseases :—				
Premature birth	15.10	0.10	—	15.20
Congenital malformations	3.50	0.49	0.20	4.19
Want of breast milk	—	—	—	—
Atrophy, debility, marasmus	23.00	1.95	2.14	27.09
Syphilis	1.56	0.29	—	1.85
Pneumonia	3.80	3.40	12.96	20.16
Erysipelas	—	—	—	—
Rickets	—	—	0 10	0.10
Injury at birth	0 29	—	—	0.29
Meningitis (not tuberculous) and encephalitis	0.49	0.88	1.46	2.83
Convulsions	3.31	1.46	2.92	7.69
Laryngitis	0.20	0.20	0.58	0.98
Bronchitis	4.68	3.11	4.58	12.37
Absorption of deleterious gases	1.17	0.29	—	1.46
Other causes	5.25	1.27	2.64	9.16

TABLE X.—*continued.*

CORK COUNTY BOROUGH.

Causes of Death	Under 3 Months	3–6 Months	6–12 Months	Total under 1 Year
All Causes	57.28	29.98	31.58	118.84
Common Infective Diseases :—				
Small-pox	—	—	—	—
Measles	—	—	2.14	2.14
Scarlet fever	—	0.54	—	0.54
Whooping-cough	1.61	0.54	1.07	3.22
Diphtheria, croup	—	—	—	—
Influenza	—	—	—	—
Chicken-pox	—	—	—	—
Diarrhœal diseases	4.82	6.41	6.96	18.19
Gastritis	—	1.07	1.61	2.68
Tuberculous Diseases :—				
Tuberculous meningitis	—	0.53	1.61	2.14
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	1.61	—	1.61
Other tuberculous diseases	0.54	0.54	0.54	1.62
Wasting Diseases :—				
Premature birth	9.09	0.54	—	9.63
Congenital malformations	2.14	—	—	2.14
Want of breast milk	—	—	—	—
Atrophy, debility, marasmus	20.34	1.61	1.06	23.01
Syphilis	—	—	—	—
Pneumonia	1.61	3.21	3.21	8.03
Erysipelas	—	—	—	—
Rickets	—	—	—	—
Injury at birth	—	—	—	—
Meningitis (not tuberculous) and encephalitis	1.07	2.69	3.73	7.49
Convulsions	11.24	6.41	4.82	22.47
Laryngitis	—	—	—	—
Bronchitis	3.75	2.13	2.68	8.56
Absorption of deleterious gases	1.07	0.54	0.54	2.15
Other causes	—	1.61	1.61	3.22

TABLE X.—*continued.*

LONDONDERRY COUNTY BOROUGH.

Causes of Death	Under 3 Months	3–6 Months	6–12 Months	Total under 1 Year
All Causes	54.13	33.24	55.08	142.45
Common Infective Diseases :—				
Small-pox	—	—	—	—
Measles	—	—	0.95	0.95
Scarlet fever	—	—	—	—
Whooping-cough	6 65	9 50	16 14	32 29
Diphtheria, croup	—	—	—	—
Influenza	0 95	—	1.90	2.85
Chicken-pox	—	—	—	—
Diarrhœal diseases	7.60	10.45	11.39	29.44
Gastritis	—	—	—	—
Tuberculous Diseases :—				
Tuberculous meningitis	—	—	1.90	1.90
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	—	—
Other tuberculous diseases	—	—	1.90	1.90
Wasting Diseases :—				
Premature birth	2.85	—	—	2.85
Congenital malformations	—	0.95	0.95	1.90
Want of breast milk	—	—	—	—
Atrophy, debility, marasmus	26.59	3.80	2.85	33.24
Syphilis	—	—	—	—
Pneumonia	0.95	0.95	6.65	8.55
Erysipelas	—	—	—	—
Rickets	—	—	—	—
Injury at birth	—	—	—	—
Meningitis (not tuberculous) and encephalitis	0.95	—	1.90	2.85
Convulsions	0.95	—	0.95	1.90
Laryngitis	—	—	—	—
Bronchitis	3.80	6.65	6.65	17.10
Absorption of deleterious gases	—	—	—	—
Other causes	2.84	0.94	0.95	4.73

TABLE X.—*continued.*

LIMERICK COUNTY BOROUGH.

Causes of Death	Under 3 Months	3–6 Months	6–12 Months	Total under 1 Year
All Causes	57.26	29.69	21.21	108.16
Common Infective Diseases :—				
Small-pox	—	—	—	—
Measles	—	—	—	—
Scarlet fever	—	—	1.06	1.06
Whooping-cough	—	—	2.12	2.12
Diphtheria, croup	—	—	—	—
Influenza	—	1.06	—	1.06
Chicken-pox	—	—	—	—
Diarrhœal diseases	—	—	—	—
Gastritis	6.36	4.24	3.19	13.79
Tuberculous Diseases :—				
Tuberculous meningitis	—	—	—	—
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	—	—
Other tuberculous diseases	—	—	1.06	1.06
Wasting Diseases :—				
Premature birth	14.85	—	—	14.85
Congenital malformations	2.12	—	—	2.12
Want of breast milk	—	—	—	—
Atrophy, debility, marasmus	5.30	3.18	1.06	9.54
Syphilis	—	—	—	—
Pneumonia	—	1.06	—	1.06
Erysipelas	—	—	—	—
Rickets	—	—	—	—
Injury at birth	—	—	—	—
Meningitis (not tuberculous) and encephalitis	—	—	1.06	1.06
Convulsions	22.27	12.73	3.18	38.18
Laryngitis	—	—	1.06	1.06
Bronchitis	3.18	7.42	7.42	18.02
Absorption of deleterious gases	—	—	—	—
Other causes	3.18	—	—	3.18

TABLE X.—*continued.*

WATERFORD COUNTY BOROUGH.

Causes of Death	Under 3 Months	3–6 Months	6–12 Months	Total under 1 Year
All Causes	58.12	13.41	38.75	110.28
Common Infective Diseases :—				
Small-pox	—	—	—	—
Measles	—	—	—	—
Scarlet fever	—	—	—	—
Whooping-cough	—	—	—	—
Diphtheria, croup	—	—	—	—
Influenza	—	—	—	—
Chicken-pox	—	—	—	—
Diarrhœal diseases	5.96	5.96	11.92	23.84
Gastritis	1.49	—	—	1.49
Tuberculous Diseases :—				
Tuberculous meningitis	1.49	—	—	1.49
Tuberculous peritonitis, tabes mesenterica and other abdominal tuberculosis	—	—	1.49	1.49
Other tuberculous diseases	—	—	—	—
Wasting Diseases :—				
Premature birth	16.39	—	—	16.39
Congenital malformations	2.98	1.49	—	4.47
Want of breast milk	—	—	—	—
Atrophy, debility, marasmus	16.39	1.49	1.49	19.37
Syphilis	—	—	—	—
Pneumonia	—	—	7.45	7.45
Erysipelas	1.49	—	—	1.49
Rickets	—	—	—	—
Injury at birth	1.49	—	—	1.49
Meningitis (not tuberculous) and encephalitis	—	—	1.49	1.49
Convulsions	1.49	—	1.49	2.98
Laryngitis	—	—	—	—
Bronchitis	1.49	1.49	11.92	14.90
Absorption of deleterious gases	—	—	—	—
Other causes	7.46	2.98	1.50	11.94

TABLE XI.

TABLE SHOWING THE PRINCIPAL CAUSES OF DEATH OF CHILDREN IN IRELAND WITHIN THE AGE PERIOD ONE TO FIVE YEARS (1914–1915) AND THE AVERAGE PERCENTAGE OF THE TOTAL DEATHS DUE TO EACH CAUSE.

(*Prepared from figures extracted from the Annual Reports of the Registrar-General for Ireland.*)

Causes of Death	No. of Deaths, 1–5 Years, 1914	No. of Deaths, 1–5 Years, 1915	Average Percentage of Total Deaths due to each cause for Years 1914–1915
All causes . . .	4,784	4,724	100
Measles . . .	674	388	11.2
Scarlet fever . .	258	193	4.8
Whooping-cough . .	372	425	8.4
Diphtheria . . .	156	165	3.4
Other epidemic diseases	79	101	1.9
Tuberculosis (all forms)	547	575	11.8
Rickets . . .	36	40	0.8
Meningitis	148	191	3.6
Convulsions . . .	201	202	4.3
Bronchitis . . .	435	497	9.8
Pneumonia (all forms) .	687	716	14.8
Gastro-intestinal disease	376	404	8.2
Burns	181	195	4.0
Atrophy and debility (over 1 year of age) .	119	177	3.1

TABLE XII.

DEATHS AMONG INFANTS AND CHILDREN IN IRELAND.

TABLE SHOWING RELATIVE MORTALITY RATES FOR THE PROVINCES AND COUNTIES OF IRELAND IN THE YEAR 1914 FOR THE AGE PERIODS—UNDER ONE YEAR, 1–2 YEARS, 2–3 YEARS, 3–4 YEARS, 4–5 YEARS (IRELAND = 100)

Province or County	Relative Mortality, under 1 Year, per 1,000 Births	Relative Mortality, 1–2 Years, per 1,000 Survivors at 1 Year	Relative Mortality, 2–3 Years, per 1,000 Survivors at 2 Years	Relative Mortality, 3–4 Years, per 1,000 Survivors at 3 Years	Relative Mortality, 4–5 Years, per 1,000 Survivors at 4 Years
Ireland .	100	100	100	100	100
Leinster .	119	140	130	112	133
Ulster .	104	112	100	112	116
Munster .	89	72	77	87	83
Connaught .	63	52	61	87	83
Dublin County Borough .	179	276	246	212	250
Belfast County Borough .	162	216	177	175	150
Dublin .	120	112	84	87	116
Waterford Co. and County Borough .	114	84	84	125	150
Limerick County and County Borough .	112	84	61	75	83
Down .	102	100	123	150	200
Antrim .	95	100	84	125	66
Armagh .	94	104	115	125	183
Wexford .	94	80	107	112	100
Cork County and Co. Borough .	89	84	100	100	116
Kilkenny .	88	64	77	75	100
Louth .	88	84	77	75	116
Tyrone .	84	48	53	62	83

TABLE XII.—*continued.*

Province or County	Relative Mortality, under 1 Year, per 1,000 Births	Relative Mortality, 1–2 Years, per 1,000 Survivors at 1 Year	Relative Mortality, 2–3 Years, per 1,000 Survivors at 2 Years	Relative Mortality, 3–4 Years, per 1,000 Survivors at 3 Years	Relative Mortality, 4–5 Years, per 1,000 Survivors at 4 Years
Westmeath .	83	16	53	50	83
Tipperary (South)	82	56	77	62	83
Kildare .	81	56	23	87	66
Wicklow .	80	88	123	25	83
Meath .	78	56	53	87	66
Kerry .	78	64	69	75	50
Londonderry Co. and County Borough .	77	52	53	75	83
Clare .	75	40	30	50	33
Tipperary (North)	75	56	69	50	50
Monaghan .	71	52	61	87	116
Carlow .	70	60	69	27	66
Queen's .	70	48	38	27	66
King's .	69	68	100	75	50
Galway .	68	52	61	100	100
Mayo .	68	56	61	100	116
Fermanagh .	67	64	123	87	116
Longford .	66	48	77	75	66
Sligo .	66	40	84	87	116
Donegal .	55	40	69	87	50
Leitrim .	48	48	53	62	33
Cavan .	46	48	15	50	50
Roscommon .	43	56	46	25	33

This Table must be used with caution, for it is compiled from the figures of only one year, and in many cases the number of deaths at the various periods is very small. Nevertheless, it shows (allowing for permissible error) that in general a low infant mortality rate is accompanied by a low rate of mortality in the next four years of life. It is to be observed that where the area is larger (the provinces) this is exactly true.

TABLE XIII.

TABLE SHOWING THE FAMILY BUDGETS OF FIVE TYPICAL WORKING-CLASS FAMILIES IN TRALEE URBAN DISTRICT, IN WHICH THE WEEKLY WAGES ARE IN EACH CASE 22s. THE COMPOSITION OF THE FAMILIES IS AS FOLLOWS :—

A. Labourer, wife, 3 children, of ages ranging from 5 years to 12 months.
B. Labourer, wife, 4 children, of ages ranging from 8 years to 1 year 7 months.
C. Labourer, wife, 6 children, of ages ranging from 13 years to 11 months.
D. Labourer, wife, 7 children, of ages ranging from 11 years to 12 months.
E. Labourer, wife, 8 children, of ages ranging from 15 years to 12 months.

(*Compiled from particulars obtained in October* 1916 *by Mrs. M. Walsh, Derrybeg, Tralee.*)

—	A			B			C			D			E		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Weekly Wages .	1	2	0	1	2	0	1	2	0	1	2	0	1	2	0
Average Weekly Expenditure	Qty.	s.	d.	Qty.	s.	d.	Qty.	s.	d.	Qty.	s.	d.	Qty.	s.	d.
Rent .	–	2	0	–	2	6	–	2	3	–	2	6	–	2	6
Bread .	–	1	0	–	–		–	–		–	–		–	–	
Butter .	–	–		1 lb.	1	10	–	–		–	–		–	–	
Flour .	1½ st.	4	0	2 st.	5	4	2 st.	5	8	3 st.	8	0	2 st.	5	4
Milk .	7 qts.	2	4	7 pts.	1	2	7 pts.	1	2	7 qts.	2	4	7 qts.	2	4
Creamery Milk to make bread	–	–		–	–		–	0	6	–	–		–	0	8
Tea .	10 ozs.	1	8	½ lb.	1	6	½ lb.	1	3	½ lb.	1	4	¾ lb.	1	3
Sugar .	6 lbs.	3	0	¼ st.	1	6	6 lbs.	3	0	½ st.	3	0	½ st.	3	0
Potatoes .	1¾ st.	1	9	3 st.	3	0	3 st.	3	0	–	–		3½ st.	3	6
Meat .	–	1	0	–	–		–	–		–	0	6	–	–	
Coal .	1 cwt.	2	8	1 cwt.	2	8	1 cwt.	2	8	1 cwt.	3	0	1 cwt.	2	8
Paraffin oil .	½ gal.	0	8	½ gal.	0	8	½ gal.	0	8	½ gal.	0	8	½ gal.	0	8
Matches .	–	0	2	–	0	2	–	0	2	–	–		–	0	2
Tobacco .	3 ozs.	1	3	6 ozs.	2	6	–	–		–	1	8	–	0	10
Soap .	1 lb.	0	4	1 lb.	0	4	–	0	4	1 lb.	0	4	–	0	4
Insurance .	–	0	3	–	0	3	–	0	3	–	–		–	0	3
Man keeps .	–	–		–	–		–	1	0	–	–		–	–	
	£1	2	1	£1	3	5	£1	1	11	£1	3	4	£1	3	6

A. & B. The men occasionally earned extra pay by working overtime.
C. The woman earned a little occasionally by charring.
D. The excess expenditure of one week had to be remedied by going short another week. Potatoes could only be bought occasionally as they were so dear.
E. Eldest girl earns 12s. per month as a servant, and gives a few shillings now and then to her mother.

TABLE XIV.

STATEMENT SHOWING FOR EACH COUNTY IN IRELAND THE NUMBER OF COTTAGES WHICH HAD BEEN BUILT OR PROVIDED UNDER THE LABOURERS ACTS AT THE FOLLOWING DATES:—31ST MARCH, 1901; 31ST MARCH, 1911; 31ST MARCH, 1915; AND 31ST MARCH, 1916—TOGETHER WITH THE PROPORTION OF PERSONS IN THE RURAL POPULATION IN THE COUNTY TO EACH COTTAGE PROVIDED.

County	Number of Labourers' Cottages at 31st March, 1901	Number of Labourers' Cottages at 31st March, 1911	Number of Labourers' Cottages at 31st March, 1915	Number of Labourers' Cottages at 31st March, 1916	Proportion of Persons in Rural Population in each County to each Cottage provided
Antrim	34	936	1,236	1,299	115
Armagh	7	272	376	421	204
Carlow	251	526	714	730	41
Cavan	281	514	851	881	97
Clare	433	862	1,100	1,115	85
Cork	3,161	6,040	7,399	7,469	37
Donegal	28	1,255	1,385	1,499	108
Down	—	1,173	1,743	1,948	81
Dublin	345	1,602	1,873	1,984	37
Fermanagh	12	154	353	374	152
Galway	18	461	697	734	223
Kerry	505	1,254	1,834	1,929	73
Kildare	463	1,128	1,392	1,406	42
Kilkenny	441	953	1,242	1,267	51
King's	220	663	952	985	49
Leitrim	68	240	308	316	201
Limerick	1,983	3,489	3,998	4,041	26
Londonderry	25	561	810	815	108
Longford	287	510	713	736	52
Louth	375	756	990	1,021	37
Mayo	—	152	214	237	760
Meath	1,351	2,077	2,640	2,714	21
Monaghan	51	297	409	436	140
Queen's	327	786	1,192	1,254	44
Roscommon	53	333	533	562	167
Sligo	26	392	499	509	133
Tipperary (N.R.)	449	799	1,128	1,162	45
Tipperary (S.R.)	894	1,258	1,578	1,623	40
Tyrone	33	941	1,152	1,184	106
Waterford	754	1,109	1,506	1,534	34
Westmeath	724	1,419	1,752	1,765	30
Wexford	946	1,868	2,148	2,203	36
Wicklow	129	629	875	891	50

TABLE XV.

The following set of Tables shows, in a concise form, the results obtained by personal inquiries made by Dr. C. J. MacCormack and Dr. E. F. Stephenson, Local Government Board Medical Inspectors, into the circumstances connected with recent deaths of Infants under one year of age registered in the following districts :—

1. Limerick County Borough.
2. Portadown Urban District.
3. Newtownards Urban District.
4. Limerick, Croom, Newcastle, Rathkeale and Kilmallock Rural Districts.
5. Monaghan Rural District

These localities, both in the North and South of Ireland, were selected with a view to obtaining information which would represent the average condition of life of the large bulk of the population. The names and addresses of the cases in which such deaths occurred were taken from the Death Registers in their consecutive order without selection. The Tables give in each case the age and cause of death, together with particulars of the economic condition of the family in which the death occurred and of the cleanliness of the home. It is to be noted that the inquiries in connection with these deaths were made at the end of the year 1916 and the beginning of the present year, and, consequently, the wages shown in the Tables are much higher than the rate of wages in similar cases before the war. The results of the investigation might be considered, broadly speaking, as typical of the conditions of the families and the homes where the majority of infant deaths in this country occur.

1. Limerick County Borough.

No.	Cause of Death	Age	No. of Children Born in Family	No. of these Children who Died	Weekly Income of Family	Weekly Rent of Home	Weekly Cost of Fuel	Cleanliness of Home
					£ s. d.	s. d.	s. d.	
1	Vomiting and diarrhœa	3 mths.	4	2	1 8 0	4 0	4 3	Neat and tidy
2	Meningitis .	4 mths.	2	1	1 0 0	2 0	6 8	Untidy
3	Convulsions .	6 weeks	3	1	Business Income	7 0	8 3	Very clean
4	Convulsions .	11 mths.	3	1	1 5 0	3 0	6 4	Not over clean
5	Vomiting and diarrhœa	7 weeks	2	1	1 2 6	2 6	4 3	Dirty
6	Convulsions .	5 mths.	9	4	1 9 6	5 0	5 6	Badly kept
7	Vomiting and diarrhœa	8 mths.	13	6	1 6 0	3 2	8 0	Fairly clean
8	Stomatitis .	6 mths.	9	4	1 11 0	2 6	6 8	Badly kept
9	Convulsions .	10 weeks	3	1	1 0 0	2 2	2 9	Clean
10	Enteritis .	12 mths.	7	5	1 0 0	2 9	3 6	Fairly tidy
11	Enteritis .	7 mths.	11	9	2 10 0	3 3	2 10	Tidy
12	General tuberculosis	7½ mths.	3	1	1 1 0	6 2	3 9	Dirty
13	Enteritis .	5 mths.	7	4	1 4 6	2 6	3 4½	Dirty
14	Convulsions .	5 weeks	2	1	0 17 6	1 0	1 3	Not over clean
15	General tuberculosis	5 mths.	4	3	1 0 0	1 6	2 4	Dirty
16	Asthenia .	2 days	4	2	2 2 0	4 0	2 7½	Tidy
17	Convulsions .	5 mths.	10	7	1 3 0	2 0	2 9	Dirty and overcrowded
18	Gastritis .	3 mths.	10	3	0 15 0	3 9	1 4½	Dirty and untidy
19	Asthenia .	5 hrs.	12	5	1 16 4	2 6	2 9	Very dirty
20	Gastritis .	3½ mths.	9	4	4 0 0	13 10	8 3	Tidy and neat
21	Convulsions .	2 mths.	2	1	1 2 0	2 3	5 6	Fairly clean
22	Gastritis .	5 mths.	14	7	—	3 6	6 9	—

2. Portadown Urban District.

No.	Cause of Death	Age	No. of Children Born in Family	No. of these Children who Died	Weekly Income of Family	Weekly Rent of Home	Weekly Cost of Fuel	Cleanliness of Home
					£ s. d.	s. d.	s. d.	
1	Debility .	3 weeks	5	4	1 10 6	1 8	2 0	Fair
2	Debility .	6 mths.	3	2	0 14 0	2 0	3 0	Not clean
3	Erysipelas .	10 weeks	3	1	1 10 0	3 0	3 10	Clean
4	Enteritis .	6 mths.	2	1	1 10 0	7 0	5 0	Clean
5	Gastro-enteritis	3½ mths.	2	1	Variable	6 6	3 10	Very clean
6	Gastro-enteritis	4 mths.	4	1	1 7 0	3 0	3 2	Fair
7	Debility .	3 mths.	6	3	0 7 0	0 10	1 0	Very fair
8	Debility (enteritis) .	2 mths.	4	2	1 1 0	3 9	2 6	Very clean
9	Premature birth	2 hours	1	1	1 5 0	4 0	4 0	Clean
10	Tetanus .	7 days	Parents have left the District			3 0	—	—
11	Debility .	7 mths.	Parents have left the District			3 0	—	—

3. Newtownards Urban District.

No.	Cause of Death	Age	No. of Children Born in Family	No. of these Children who Died	Weekly Income of Family	Weekly Rent of Home	Weekly Cost of Fuel	Cleanliness of Home
					£ s. d.	s. d.	s. d.	
1	Debility and marasmus	12 weeks	1	1	2 0 0	1 9	5 6	Very clean
2	Premature birth	1 day	2	2	1 0 0	2 6	5 6	Not very clean
3	Whooping-cough	3 mths.	3	2	1 1 0	1 6	3 9	Clean
4	Tuberculous meningitis	5½ mths.	14	4	1 9 0	2 0	5 6	Clean
5	Premature birth	1 day	1	1	Business Income	15 5	—	Very clean
6	Premature birth	3½ weeks	9	4	1 6 0	2 6	5 6	Clean
7	Gastro-enteritis	11 mths.	3	1	0 19 0	1 6	5 6	Fair
8	Bronchitis .	43 days	12	4	1 2 6	3 0	5 6	Clean
9	Bronchitis .	1 mth.	4	2	1 1 0	1 6	5 6	Clean
10	Premature birth	15 mins.	2	2	1 5 0	1 4	5 6	Clean

4. Limerick, Croom, Newcastle, Rathkeale and Kilmallock Rural Districts.

No.	Cause of Death	Age	No. of Children Born in Family	No. of these Children who Died	Weekly Income of Family	Rent of Home	Weekly Cost of Fuel	Cleanliness of Home
					£ s. d.	s. d.	s. d.	
1	Convulsions	10 hours	4	3	Farmer	—	—	Usual standard in such houses
2	Gastritis	3 mths.	4	1	1 1 0	Free	1 4	Fairly tidy
3	Gastritis	1 mth.	4	2	0 18 0	Free	5 3	—
4	Gastritis	5½ mths.	8	2	0 15 0	2 0 per week	5 6	Fairly clean
5	Premature birth	2 hours	1	1	0 12 0	Free	—	Very neat and tidy
6	Gastritis	13 days	2	1	Farmer	£3 per an. with 2 acres	—	Not over-clean
7	Enteritis	1 year	4	3	Farmer	£31 per an. with 41 acres	5 0	Admirably clean
8	Enteritis	6 mths.	2	1	Farmer	£35 per an. with 47 acres	1 6	Moderately clean
9	Pneumonia, gastric toxæmia, convulsions	9 mths.	8	2	1 5 0	1 0 per week	4 0	Clean and orderly
10	Tuberculous meningitis	11 mths.	8	4	0 15 0	0 5 per week	2 8	Not over-clean
11	Tuberculous meningitis	6 mths.	8	2	0 9 0	Free	4 0	Dirty
12	Diphtheria	7 mths.	8	2	1 0 0	Free	4 0	Very dirty & foul-smelling
13	Premature birth	15 days	6	2	0 15 0	4 7 per week	4 0	Fair
14	Broncho-pneumonia	8 mths.	1	1	Farmer	13 9 per week	Free	Very clean and neat
15	Gastro-enteritis	2 mths.	3	1	0 14 0	0 7 per week	2 9	Clean and neat
16	Pertussis	12 mths.	12	6	0 14 6	Free	2 9	Very dirty
17	Convulsions	3 days	4	1	0 16 6	Free	Free	Tidy and neat
18	Gastro-enteritis	12 mths.	3	1	Farmer	£13 10s. per an. with land	12 6	Orderly and neat
19	Abscess in scalp (illegitimate)	12 mths.	2	1	0 16 6	0 9 per week	2 9	Dirty
20	Debility	6 weeks	8	4	0 13 0	2 0 per week	2 8	Dilapidated and not over clean
21	Convulsions	6 mths.	4	1	1 3 0	2 0 per week	2 9	Very dirty
22	Debility	20 mins.	1	1	1 0 0	4 8 per week	2 8	Very clean
23	Debility	6 weeks	8	2	1 0 0	Free	Free	Very unclean
24	Acute bronchitis	'8 days	2	1	1 0 0	—	5 4	Well kept

5. Monaghan Rural District.

No.	Cause of Death	Age	No. of Children Born in Family	No. of these Children who Died	Weekly Income of Family	Weekly Rent of Home	Cleanliness of Home
1	Premature birth (Twins, both died)	½ hour	17	11	£ s. d. Very wealthy	s. d. —	Very clean
2	Debility from birth	5 days	9	3	0 10 0	Free	Very clean
3	Bronchitis .	5 mths.	1	1	Well off	Farm house	Very clean
4	Debility from birth	10 days	5	1	1 3 0	2 4	Clean
5	Whooping Cough	9 mths.	3	1	0 10 0	0 6	Not clean
6	Debility from birth	9 mths.	4	1	0 10 0	0 6	Fair

1. Limerick County Borough.

An examination of the table relating to the 22 infant deaths in Limerick County Borough elicits the following results :—

In seven cases death was attributed to convulsions, and in four of these there was no doctor in attendance. Vomiting and diarrhœa, enteritis and gastritis were each responsible for three deaths, general tuberculosis and asthenia for two deaths each, and meningitis and stomatitis for one death each. In seven instances the mortality occurred within the age of three months, in nine within the age period of three to six months, and in six within the period six to twelve months. One hundred and forty-three births occurred in the families affected, and of these children 73 had died, giving a mortality rate of over 51 per cent. of the children born. Omitting three families who pay, respectively, £36, £18, and £16 a year in rent, the average weekly rent of the remaining nineteen homes is less than 2s. 10d. The average weekly income of eighteen of the families is approximately £1 4s. 8d., and their weekly expenditure on fuel 4s.

2. Portadown Urban District.

An examination of the circumstances connected with the 11 infantile deaths in Portadown Urban District shows that in five instances the cause of death was debility, in three instances enteritis, whilst the remaining three were attributed to premature birth, erysipelas, and tetanus, respectively. Five of the deaths occurred within the first three months, 3 in the age period three to six months, and 3 between six and twelve months of age. Thirty children were born in nine of the families affected, and of these 16 had succumbed, showing a mortality of over 53 per cent. in children ; particulars of the remaining two families are not available. If two households paying respectively nearly £17 and over £18 per annum as rent be omitted from the calculation, the average weekly rent of the homes affected is less than 2s. 9d. The weekly income of eight of the households averages about 23s. and the expenditure on fuel each week about 3s.

3. Newtownards Urban District.

An analysis of the table relating to the 10 infant deaths in Newtownards Urban District gives the following results :—

In 4 cases the cause of death was premature birth ; in 2 cases bronchitis ; whilst whooping-cough, debility and marasmus, gastro-enteritis and tuberculous meningitis were each accountable for one of the remaining cases. Six of the infants died within the first three months ; 3 of these did not live longer than one day after birth. In the age period three to six months 3 died, and the remaining one survived to the age of eleven months. The number of children born in the families in which these deaths occurred was 51, and of these 23 had died, giving an average loss of over 45 per cent. of the children born.

As regards the economic conditions in the households affected, it will be observed that leaving out of account one family in comfortable circumstances, which pays £40 a year as rent, the average rent of the homes with which we are concerned is less than 2s. per week. The average weekly income of these households does not reach 25s., and the expenditure on fuel amounts to about 5s. 4d. weekly.

4. Limerick, Croom, Newcastle, Rathkeale, and Kilmallock Rural Districts.

Twenty-four infant deaths were investigated in the Limerick, Croom, Newcastle, Rathkeale and Kilmallock Rural Districts of Limerick County. It will be seen from the table that the heaviest incidence was from gastro-intestinal diseases, which accounted for 9 deaths. The next in importance were convulsions and debility, which were each responsible for 3 deaths, whilst premature birth, broncho-pneumonia and tuberculous meningitis claimed 2 victims each. The remaining 3 infants succumbed respectively to whooping-cough, diphtheria, and an abscess in the scalp. In 11 cases death occurred within three months

from birth, and in 7 of these the infant did not survive the first month. Two infants died in the age period three to six months. The remaining eleven succumbed under or at one year of age.

It is shown that in the families affected 110 children had been born, and of these 46, or about 42 per cent., had died. It was not possible in all these cases to obtain an indication of the economic circumstances of the family in terms of weekly income, rent, &c., as in some instances the income was derived from a farm, and the inclusive rent of the house and farm is quoted, whilst in other cases the houses are given as free of rent. In 18 cases in which particulars of the weekly income of the family are available, the average is 17s. 1d. The weekly rents of the homes occupied by ten families are given. The average of nine of these is 2s. per week, the remaining one being the house of a well-to-do farmer.

5. Monaghan Rural District.

As regards the infantile deaths in Monaghan Rural District, two cases—being twins who died from the same cause at the same age—may be taken as one case. It will be seen from the table that debility from birth claimed three victims, whilst premature birth, bronchitis and whooping-cough were each accountable for one death. In three instances the disease proved fatal within three months from birth, in one within the age period three months to six months, and in two within the age period six months to twelve months. In the six cases for which particulars are available, out of 39 children born in the families affected, 18, or 46 per cent., had died at the time of this inquiry. Two of the households are in comfortable circumstances, but the average weekly income of the remaining four is 13s. 3d., and the average weekly rent of three of them is less than 1s. 2d. In three cases it was ascertained that the family had not always sufficient food.

TABLE XVI.

TABLE SHOWING BY PROVINCES THE NUMBER OF MEDICAL OFFICERS OF HEALTH AND DISPENSARY MEDICAL OFFICERS OF URBAN AND RURAL DISPENSARY DISTRICTS IN IRELAND whose opinions concur as to the most fatal of the six under-mentioned groups of Infantile Diseases in relation to Infant Mortality in their respective districts.

(Prepared from particulars obtained from Medical Officers of Health and Dispensary Medical Officers.)

Groups of Infantile Diseases	Total No. of Medical Officers concurring as to Most Fatal Disease Group	ULSTER		LEINSTER		MUNSTER		CONNAUGHT	
		No. of Urban Medical Officers	No. of Rural Medical Officers	No. of Urban Medical Officers	No. of Rural Medical Officers	No. of Urban Medical Officers	No. of Rural Medical Officers	No. of Urban Medical Officers	No. of Rural Medical Officers
1. Bronchitis & pneumonia	292	30	75	19	48	14	62	3	41
2. Diarrhœa & enteritis	180	14	24	30	21	17	53	3	18
3. Prematurity & congenital defects	108	10	39	2	21	3	21	—	12
4. Convulsions	87	3	13	4	19	2	20	2	24
5. Measles & whooping-cough	79	12	33	7	13	5	7	1	1
6. Atrophy & marasmus	60	8	12	7	17	4	9	—	3

TABLE XVII.

TABLE SHOWING BY PROVINCES THE NUMBER OF MEDICAL OFFICERS OF HEALTH AND DISPENSARY MEDICAL OFFICERS OF URBAN AND RURAL DISPENSARY DISTRICTS IN IRELAND who refer to the under-mentioned causes as having a serious adverse effect on the physical welfare of Mothers and Children in their respective Districts, viz. :—(1) Intemperance (usually amongst the fathers) ; (2) Improper feeding of infants ; (3) Poverty ; (4) Difficulty of obtaining fresh milk ; (5) Employment of women in factories, agricultural labour, &c., too close up to, or too soon after, confinement, or at over-arduous work ; (6) Malnutrition of mothers arising from the excessive use of tea and white bread ; (7) Employment of untrained midwives (handywomen) at confinements ; (8) Prolonged nursing of children.

(*Prepared from particulars obtained from Medical Officers of Health and Dispensary Medical Officers.*)

Causes Adversely Affecting the Welfare of Mothers and Children	Total No. of Medical Officers who refer to each Cause	ULSTER		LEINSTER		MUNSTER		CONNAUGHT	
		No. of Urban Medical Officers	No. of Rural Medical Officers	No. of Urban Medical Officers	No. of Rural Medical Officers	No. of Urban Medical Officers	No. of Rural Medical Officers	No. of Urban Medical Officers	No. of Rural Medical Officers
1. Intemperance	190	23	38	17	38	21	33	3	17
2. Improper feeding	157	15	29	11	30	8	38	2	24
3. Poverty	140	4	19	15	31	17	27	2	25
4. Scarcity of milk	83	—	14	1	32	1	25	1	9
5. Female industrial, &c., employment	63	18	19	1	6	—	11	—	8
6. Malnutrition of mothers. Use of tea and white bread	51	2	17	3	12	—	12	—	5
7. Untrained midwives	16	1	3	—	2	—	3	—	7
8. Prolonged lactation	10	2	2	1	3	1	—	—	1

TABLE XVIII.

TABLE SHOWING BY PROVINCES THE NUMBER OF URBAN AND RURAL DISTRICTS IN WHICH THE EXISTENCE OF CONDITIONS DETRIMENTAL TO THE PUBLIC HEALTH WAS REPORTED BY THE LOCAL GOVERNMENT BOARD MEDICAL INSPECTORS DURING THE YEARS 1914–1916 UNDER THE FOLLOWING HEADINGS:—(1) Defective domestic scavenging, which includes dirty houses and yards, accumulation of refuse and manure in yards or too close to dwellings, &c.; (2) defective sewerage systems; (3) water supplies inadequate in quantity or of doubtful quality; (4) insanitary houses or houses unfit for human occupation; (5) defective sanitary accommodation or lack of sanitary accommodation in connection with dwellings.

The insanitary and defective conditions reported were in every case brought by the Local Government Board for Ireland under the notice of the Sanitary Authority concerned with a view to having the necessary improvements effected.

Insanitary or Defective Conditions	No. of Districts in which such Conditions were Reported	ULSTER		LEINSTER		MUNSTER		CONNAUGHT	
		No. of Urban Districts	No. of Rural Districts	No. of Urban Districts	No. of Rural Districts	No. of Urban Districts	No. of Rural Districts	No. of Urban Districts	No. of Rural Districts
1. Defective domestic scavenging	172	23	24	11	33	6	41	5	29
2. Defective sewerage	147	13	21	15	28	14	32	4	20
3. Defective or insufficient water supply	135	11	38	3	26	7	29	1	20
4. Houses insanitary or unfit for human occupation	104	3	13	22	43	8	7	4	4
5. Defective sanitary accommodation or want of sanitary accommodation	61	8	8	17	3	20	—	4	1

TABLE XIX.

MATERNITY AND CHILD WELFARE SCHEMES IN IRELAND.

URBAN DISTRICTS IN WHICH SCHEMES HAVE BEEN APPROVED BY THE LOCAL GOVERNMENT BOARD FOR IRELAND.

Urban Districts	Urban Districts
Armagh	Listowel
Ballina	Longford
Ballymena	Lurgan
Ballymoney	Midleton
Banbridge	Monaghan
Bangor	New Ross
Carlow	Newry
Coleraine	Omagh
Cookstown	Pembroke
Dublin County Borough	Portadown
Larne	Rathmines and Rathgar
Lisburn	Tullamore

TABLE XX.

STATEMENT SHOWING PARKS AND PLAYCENTRES IN URBAN DISTRICTS AND BY WHOM THEY ARE MAINTAINED.

(Prepared from particulars furnished by Superintendent Medical Officers and Medical Officers of Health.)

Urban District	Name or Description of Park or Playcentre	By whom Maintained
Arklow	——	Messrs. Kynoch, Ltd., Arklow
Athlone	A small park near the river	Urban District Council
Athy	The Park	Duke of Leinster
Ballinasloe	Garbally Park and large Fair Green	Earl of Clancarty
Ballymena	People's Park	Urban District Council
Bangor	Marine Gardens Ward Park Ballyholme Park Strickland's Glen	Urban District Council
Belfast County Borough	Ormeau Park Alexandra Park Falls Park Dunville Park Botanic Park Victoria Park Woodvale Park	Corporation
Belturbet	Pleasure Garden	Urban District Council
Blackrock	Children's Playground in centre of town, and large Public Park; also some two miles of sandy foreshore available	Urban District Council
Bray	People's Park in Little Bray and the Esplanade;	Urban District Council
Buncrana	Public green and beach	——
Bundoran	The fields near the beach are so used and the strand	——
Carrickfergus	Shaftesbury Park	Urban District Council

TABLE XX.—*continued.*

Urban District	Name or Description of Park or Playcentre	By whom Maintained
Carrick-on-Suir	A fine park	Urban District Council
Cashel	Public field a short distance from town and several places where children can play	—
Castlebar	The Lawn and Green	Earl of Lucan
Cavan	Farnham Gardens	Lord Farnham
Clonakilty	There is abundant free space on land and on seashore	——
Coleraine	Anderson Park	Urban District Council
Cork County Borough	Several open spaces, particularly in front of dwellings erected by Corporation	——
Dalkey	People's Park	Urban District Council
	Sorrento Park	Public Trustees
Dublin County Borough	Phœnix Park	Board of Works
	St. Stephen's Green	Board of Works
	Botanic Gardens	Dept. of Agriculture
	St. Mary's, Mary Street	Dublin Corporation
	Christchurch Gardens	Dublin Corporation
	St. Audoen's, Cornmarket	Dublin Corporation
	St. Andrew's, Cook Street	Dublin Corporation
	St. Michan's, Halston Street	Dublin Corporation
	Hill Street Playground	Dublin Corporation
	Fairview	Dublin Corporation
	Queen's Square	Dublin Corporation
	Constitution Hill—	
	Civic Playground	Women's National Health Association
	Gardening Ground	Women's National Health Association
	St. Monica's, St. Augustine St.	Dublin Corporation
	Tenter's Lane and Mill Street	Dublin Corporation
	Brabazon Playground, Pimlico	Earl of Meath
	Maitland Playground, New Row	Dublin Corporation
	Iveagh Play Centre, Bull Alley	Lord Iveagh
	Halliday Road, Aughrim Street	Dublin Artisans' Dwellings Co.
Dundalk	Two	(*a*) Lord Roden (*b*) Urban District Council

TABLE XX.—*continued*

Urban District	Name or Description of Park or Playcentre	By whom Maintained
Dungannon . .	Lord Ranfurly's Park is open to everybody, and Mr. James Dickson, Miltown House, has provided a small park for the children of the neighbourhood	——
Dungarvan . .	A park in the town overlooking the sea and a smaller park adjoining the causeway between Dungarvan and Abbey Island, also overlooking the sea	Urban District Council
Enniskillen . .	Coleshill Gardens . . .	Urban District Council
Fermoy . . .	Children have free access to the river banks and fields adjoining the River Blackwater	——
Galway . . .	Eyre Square, South Park, and Salthill Park	Urban District Council
Kells . . .	A public park in which hurling and football are mostly played	Urban District Council
Kilkenny . . .	Some Fair Greens . . .	Urban District Council
Killiney & Ballybrack	Victoria Hill	Urban District Council
Kilrush . . .	Vandeleur Demesne . . .	Urban District Council
Kingstown . .	People's Park	Urban District Council
Limerick County Borough	Two Parks. River banks on outskirts of the City also much used by the population in summer weather	Corporation
Lisburn . . .	Wallace Park; Castle Gardens .	Urban District Council
Londonderry County Borough	One	——
Longford . . .	Longford Park	Urban District Council
Lurgan . . .	Town Park	Urban District Council
Mallow . . .	Mallow Town Park . . .	Urban District Council
Monaghan . .	There are plantations which are ideal places for children .	Urban District Council

TABLE XX.—*continued.*

Urban District	Name or Description of Park or Playcentre	By whom Maintained
Newcastle (Co. Down)	——	Urban District Council
Newtownards . .	Old Bowling Green railed in used as playground by children	Urban District Council
Portadown . .	The Park	Urban District Council
Pembroke . .	Herbert Park; Ringsend Park; South Lotts Road; Sandymount (2); Harmony Row, Donnybrook	Urban District Council
Portrush . . .	Surrounding vacant areas . .	Urban District Council
Queenstown . .	Band Promenade, Baths Quay, and Midleton Park . .	——
Rathmines and Rathgar	Palmerston Park and Harold's Cross Park. Artizans' Dwellings of Council have large open spaces which could easily be made into excellent playgrounds	Urban District Council
Skibbereen . .	The children have ample play centres	——
Tipperary . .	——	——
Warrenpoint . .	Municipal Gardens . . .	Urban District Council
Waterford County Borough	The People's Park . . .	Corporation
Westport . .	——	Marquis of Sligo
Wicklow . . .	The Morrogh, sea-front, &c., but not availed of much	——
Youghal . . .	Green Park	Urban District Council

TABLE XXI.

STATEMENT SHOWING URBAN DISTRICTS WHICH DO NOT POSSESS PARKS OR PLAYCENTRES.

Armagh	Dromore	Navan
Ballina	Ennis	Nenagh
Ballyclare	Granard	New Ross
Ballymoney	Holywood	Newry
Banbridge	Keady	Omagh
Birr	Killarney	Sligo
Carrickmacross	Kinsale	Strabane
Castleblayney	Larne	Tanderagee
Clones	Letterkenny	Templemore
Clonmel	Limavady	Thurles
Cookstown	Listowel	Tralee
Cootehill	Macroom	Trim
Donaghadee	Midleton	Tullamore
Drogheda	Naas	Wexford

ACTIVITIES OF THE WOMEN'S NATIONAL HEALTH ASSOCIATION FOR IRELAND CONNECTED WITH MATERNITY AND CHILD WELFARE WORK.

The Branches of the Women's National Health Association in Dublin and Belfast are dealt with in the Reports of Dr. Ella Webb and Dr. Marion Andrews with respect to those cities. Particulars of the Babies' Clubs established by the Association will be found in the General Report.

Maternity and Child Welfare Schemes.

In addition the following Branches are associated with local Maternity and Child Welfare Schemes, viz. :—Pembroke, Kingstown, Carlow, and Listowel.

There are thirty-one other Branches which interest themselves specially in Child Welfare work.

Midwives.

In Kingstown and Clontibret the Association has fully qualified midwives.

Classes for Mothers, &c.

These are held in connection with the Branches in Blackrock, Kingstown, Milltown, Carlow, Naas, Faughan Valley, Coleraine, Clontibret, Carrick-on-Suir, Listowel, and Carrick-on-Shannon.

Dental Clinics.

The following Branches have established Dental Clinics, viz. :—Antrim and Muckamore, Ardagh, Bray, Howth, Milltown, Newbridge, Randalstown, and Rathmines.

Provision for Welfare of School Children.

Arrangements have been made by the local Branches for the inspection of school children at Killorglin by a doctor, and for their inspection by a nurse at Carlow, Howth, Listowel, and Mullingar.

School meals are provided by the Branches in Connor and Kells, Carrick-on-Shannon, Killorglin, Listowel, Mullacash, Omagh, Valencia Island, and Waterville.

Playgrounds and School Gardens are maintained in connection with the following Branches of the Association :—Tydavnet, Killeaden, and Shankill.

Boot Clubs for School Children are carried on by the Branches at Milltown, Eglinton, and Bennett's Bridge.

Milk Supply.

In addition to the Milk Depots carried on by the Association, seventeen Branches have made arrangements for supplying milk free or at a reduced price.

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